

102

UNIVERSAL FREQUENCY
TRANSLATION (UFT)
MODULE

PORT 1

PORT 2

PORT 3
CONTROL SIGNAL

UNIVERSAL FREQUENCY
TRANSLATION (UFT)
MODULE 103

PORT 1

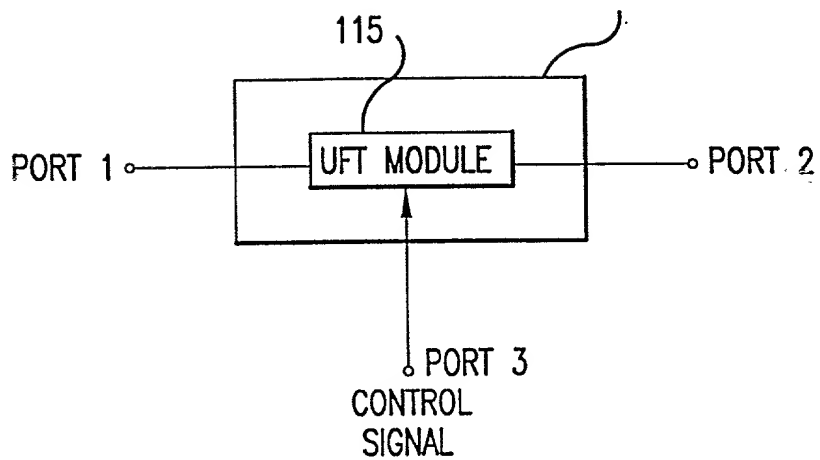
106

PORT 2

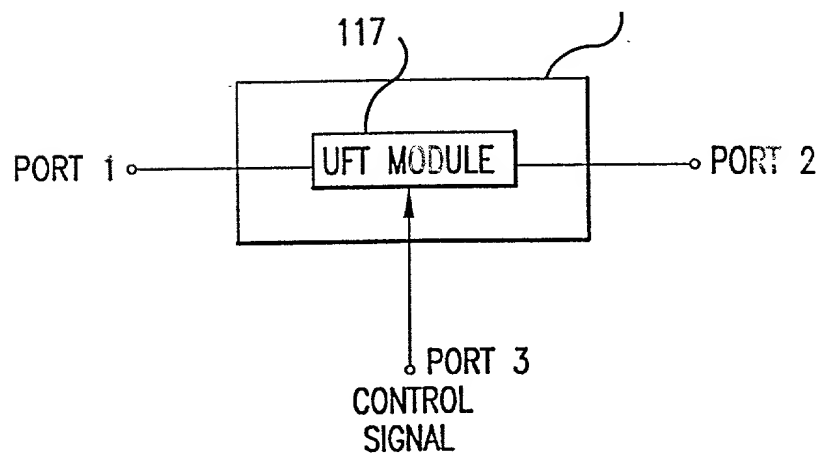
PORT 3

CONTROL
SIGNAL
108

UNIVERSAL FREQUENCY DOWN-CONVERSION (UFD) MODULE 114



UNIVERSAL FREQUENCY UP-CONVERSION (UFU) MODULE 116



0974635.033001
T00E80" 52904260

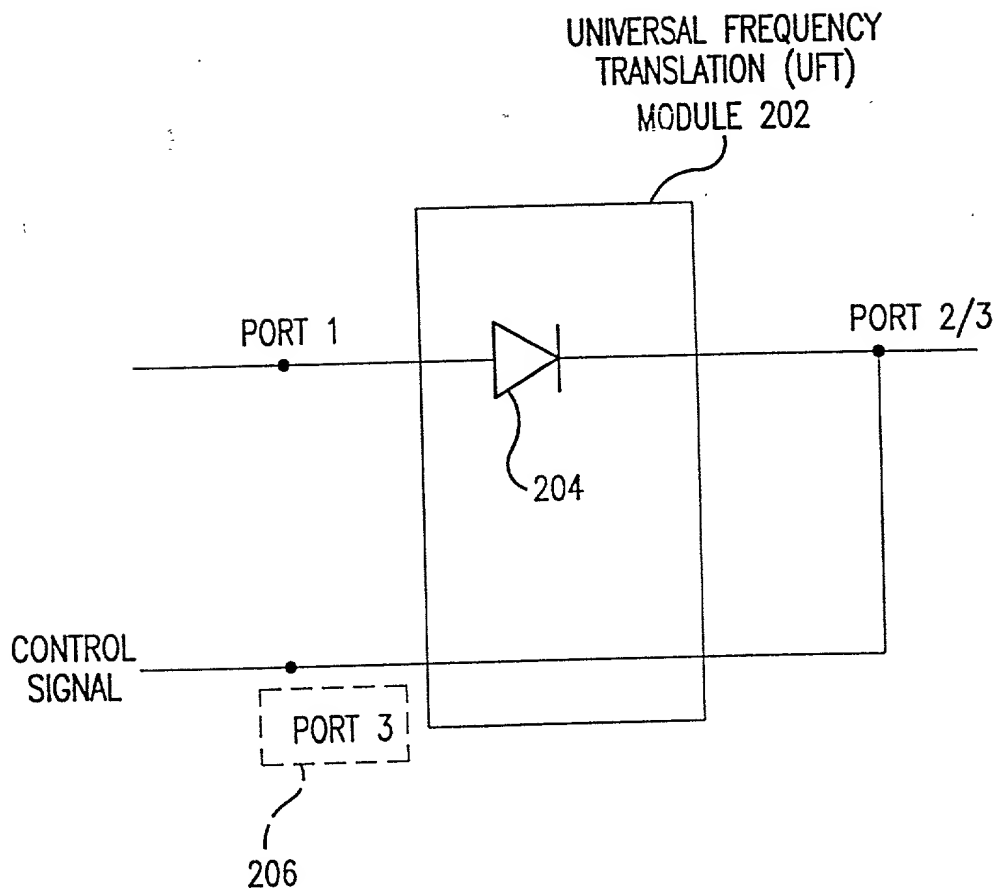


FIG. 2

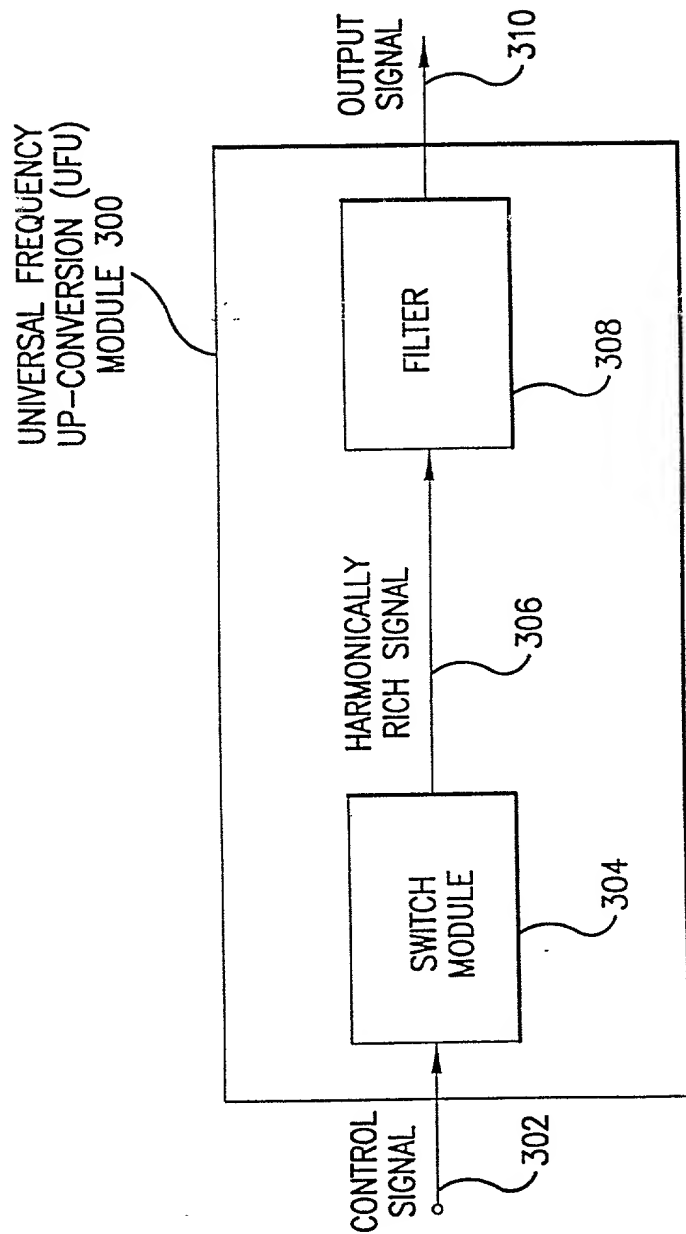


FIG. 3

UNIVERSAL FREQUENCY
UP-CONVERSION (UFU)
MODULE 401

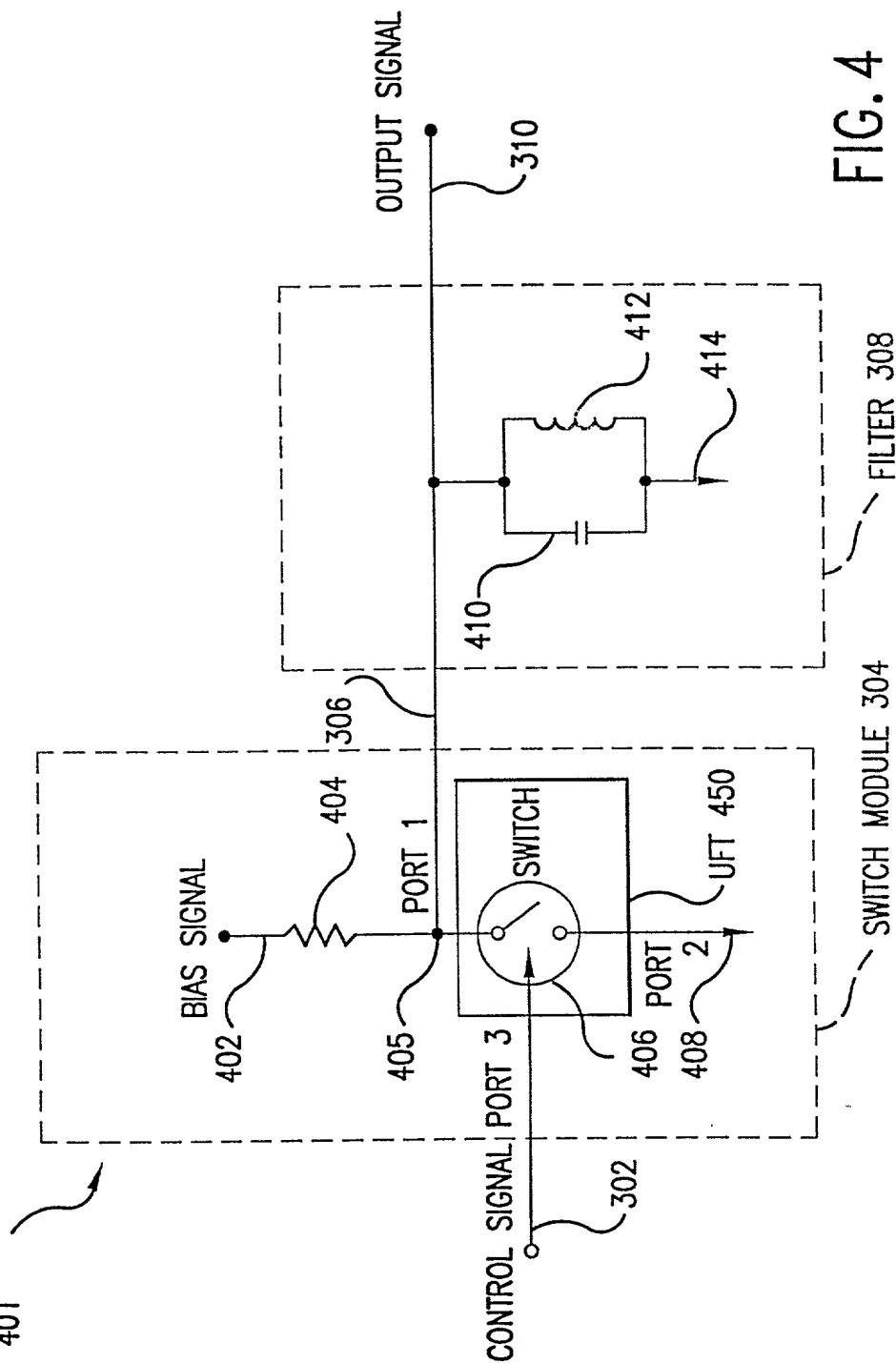


FIG. 4

UNIVERSAL FREQUENCY
UP-CONVERSION
(UFU) MODULE 590

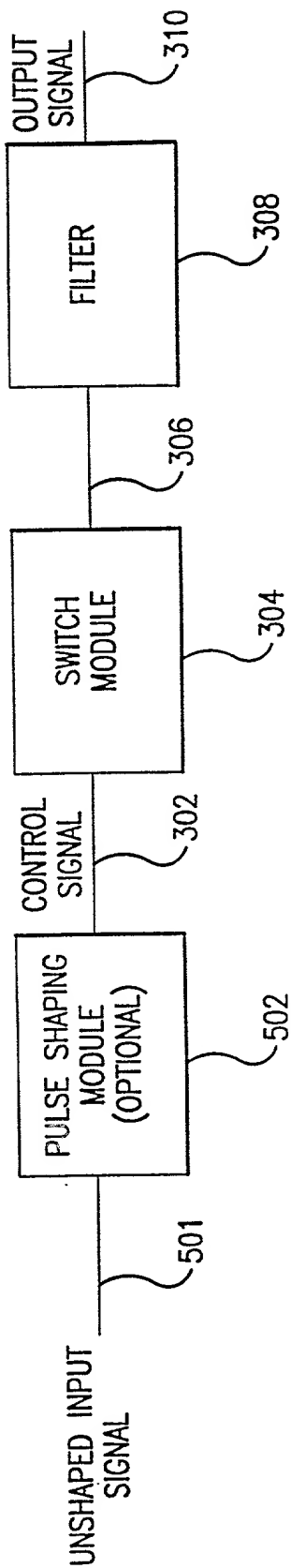


FIG. 5

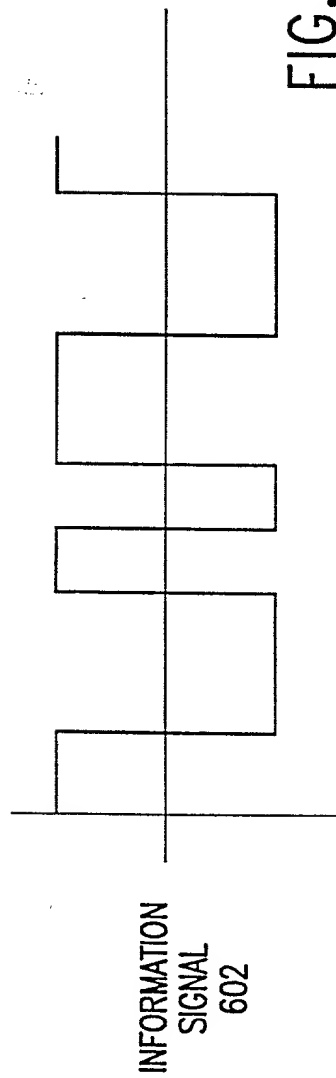


FIG. 6A

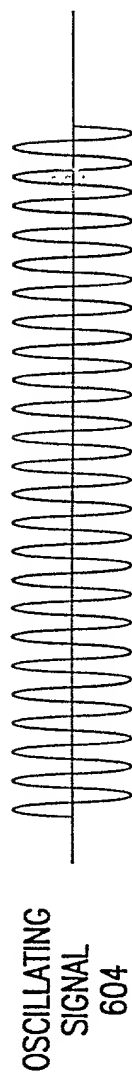


FIG. 6B

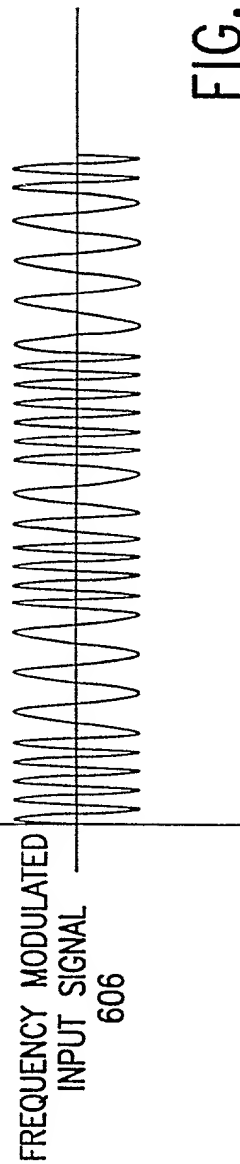


FIG. 6C

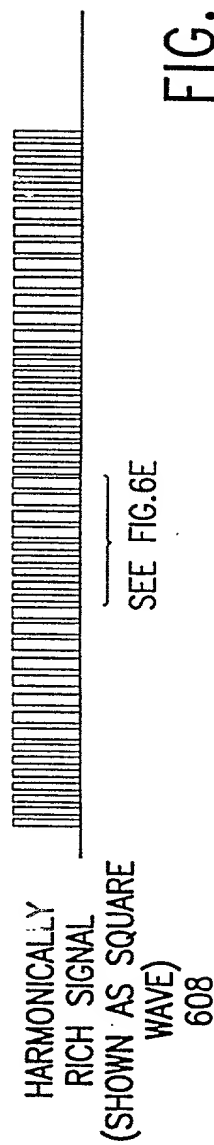
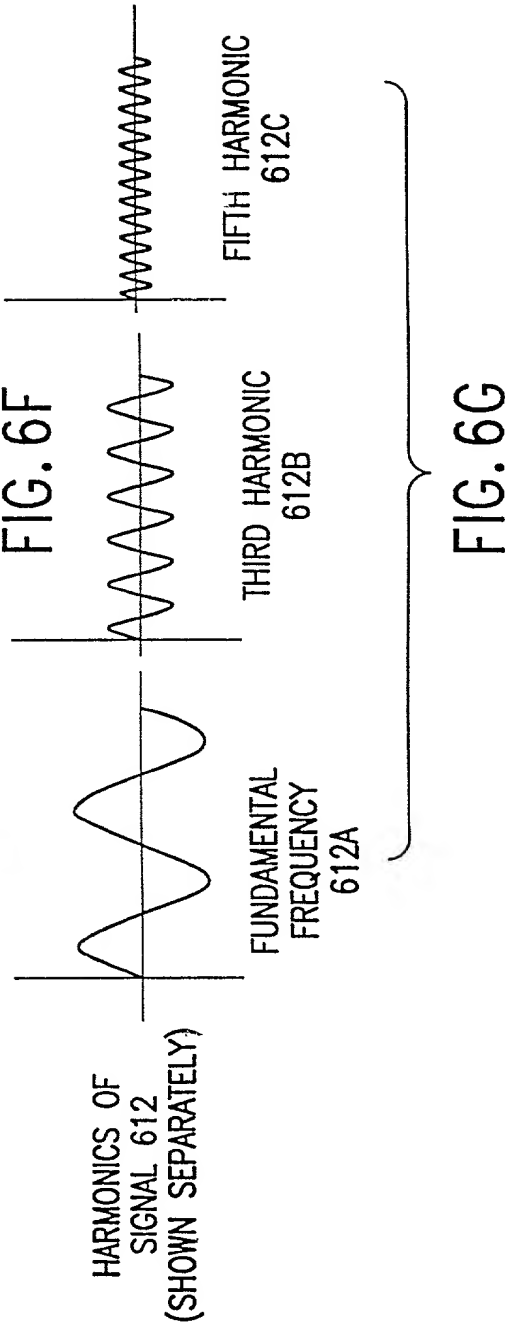
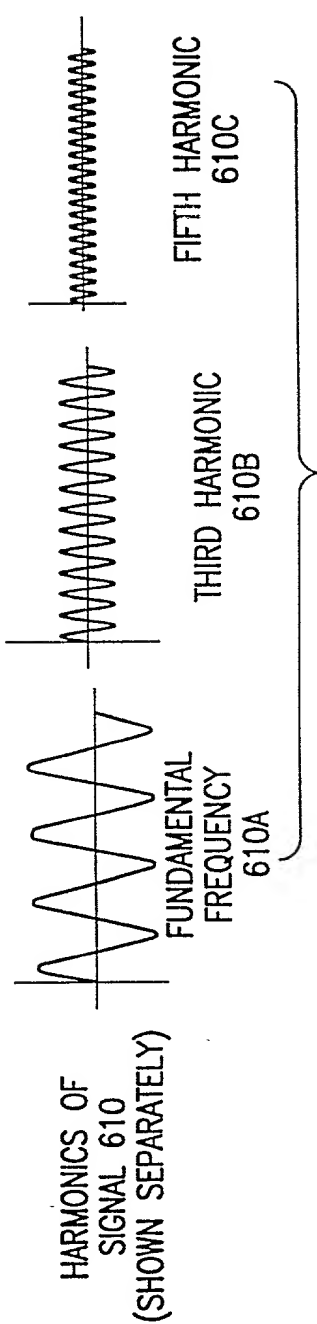
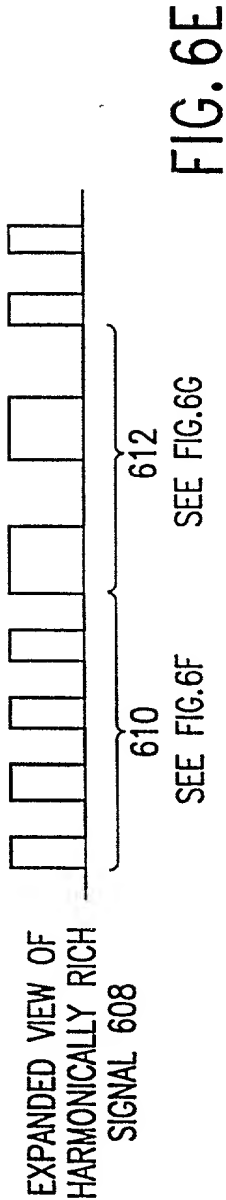


FIG. 6D



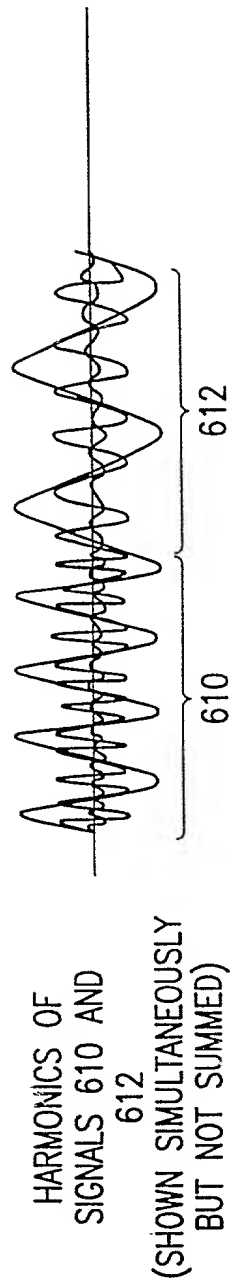


FIG. 6H

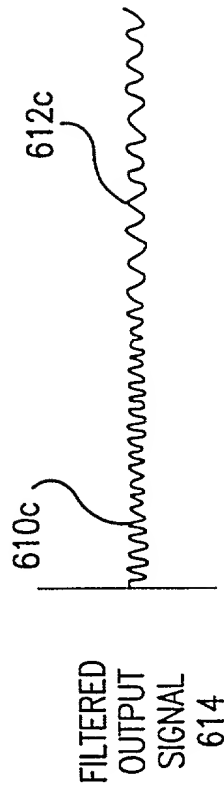


FIG. 6I

0970675.08001
T00E80" 52904260

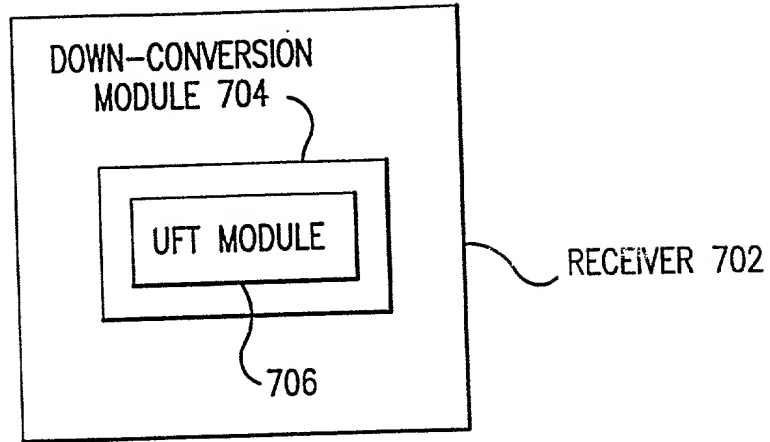


FIG. 7

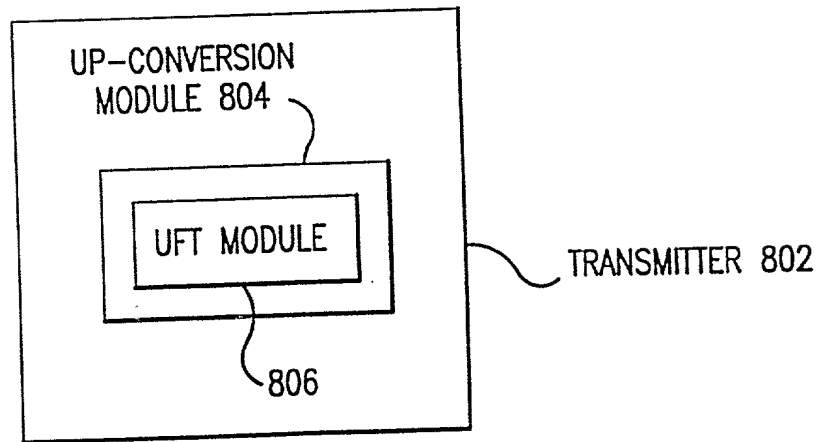


FIG. 8

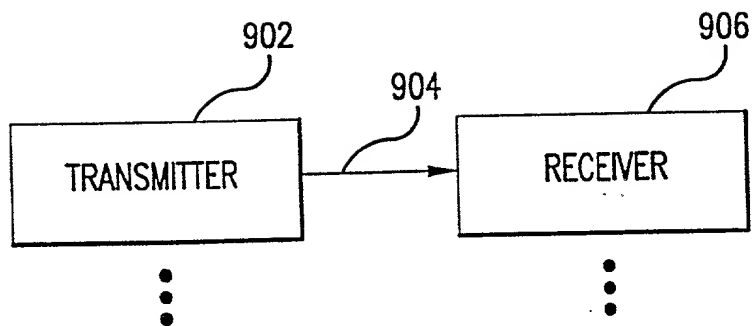


FIG. 9

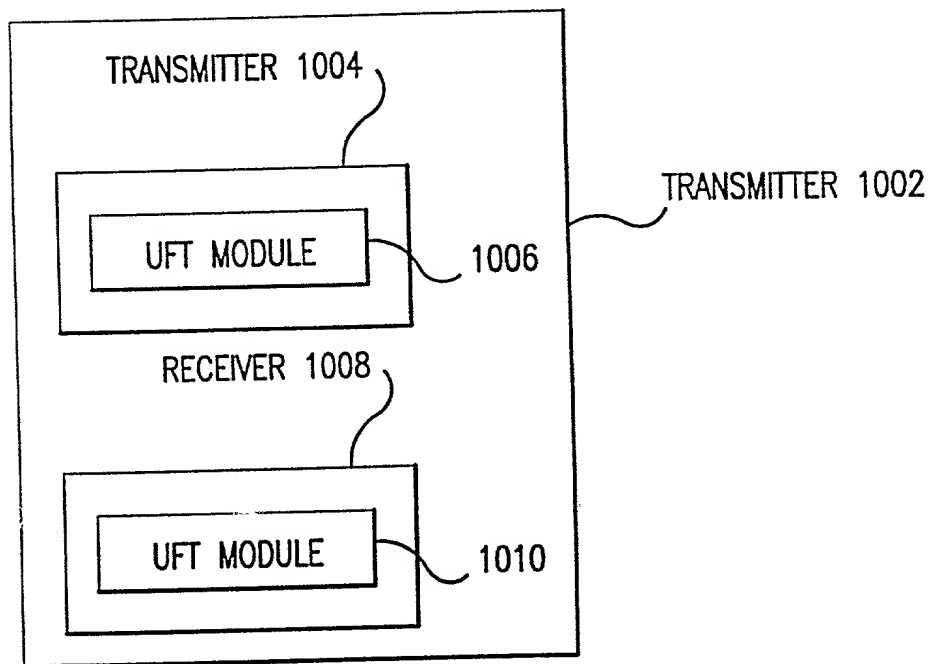


FIG. 10

TRANSCIVER 1102

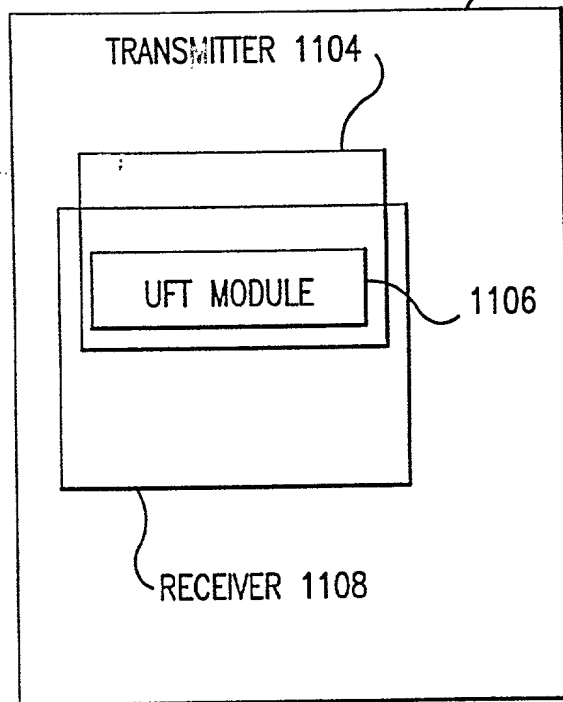


FIG. 11

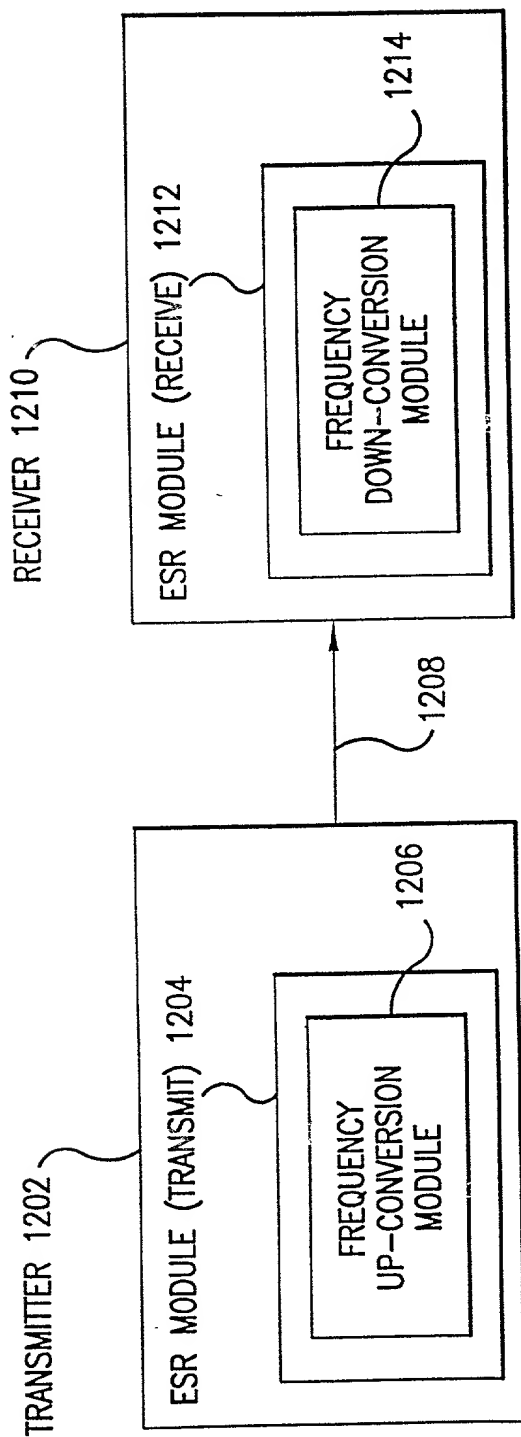


FIG. 12

UNIFIED DOWN-CONVERTING
AND FILTERING (UDF) MODULE 1302

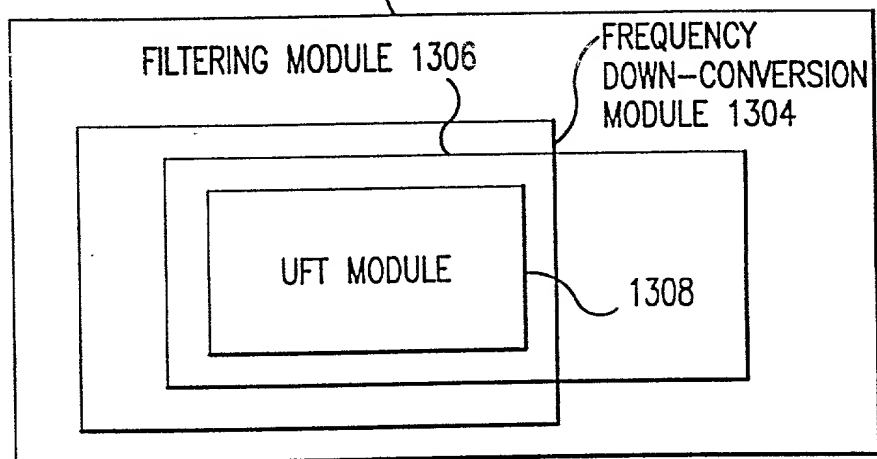


FIG. 13

RECEIVER 1402

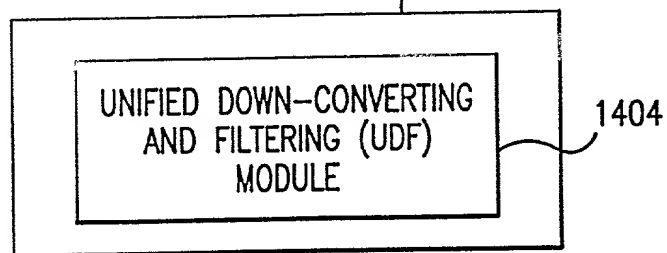


FIG. 14

Diagram 1500 illustrates a UDF module (1512) that receives input from a DOWN-CONVERTER (1508) and a FILTER (1510). The DOWN-CONVERTER (1508) and the FILTER (1510) are connected in series, with the output of the DOWN-CONVERTER (1508) feeding into the FILTER (1510). The output of the FILTER (1510) is then fed into the UDF MODULE (1512).

```

graph LR
    1514[FILTER] --> 1516[DOWN-CONVERTER]
    1516 --> 1518[FILTER]
    1518 ~ 1520[UDF MODULE]
  
```

Diagram 1500 illustrates a data flow process. It consists of two rectangular boxes. The first box on the left is labeled "FILTER" and has the reference numeral "1522" above it. A curved line connects "1522" to the box. An arrow points from the "FILTER" box to a second rectangular box on the right labeled "UDF MODULE". The reference numeral "1524" is positioned above the "UDF MODULE" box, with a curved line connecting it to the box.

1526

DOWN-CONVERTER

1528

UDF MODULE

FIG. 15E

0970675.03001
"52502260"
T00E80"

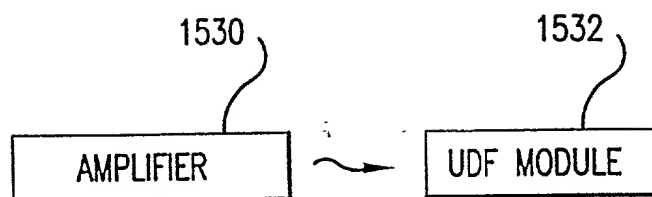


FIG. 15F

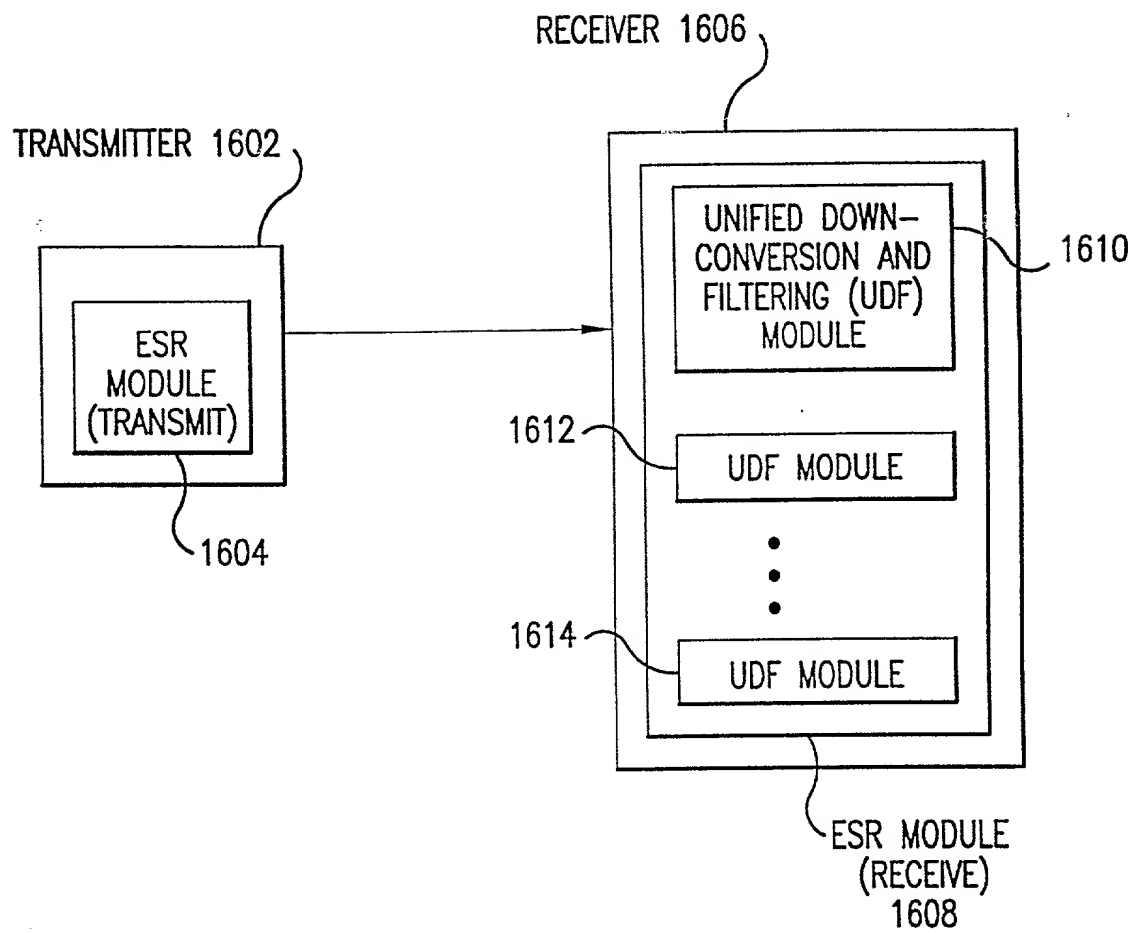


FIG. 16

UNIFIED DOWNCONVERTING AND
FILTERING (UDF) MODULE 1702

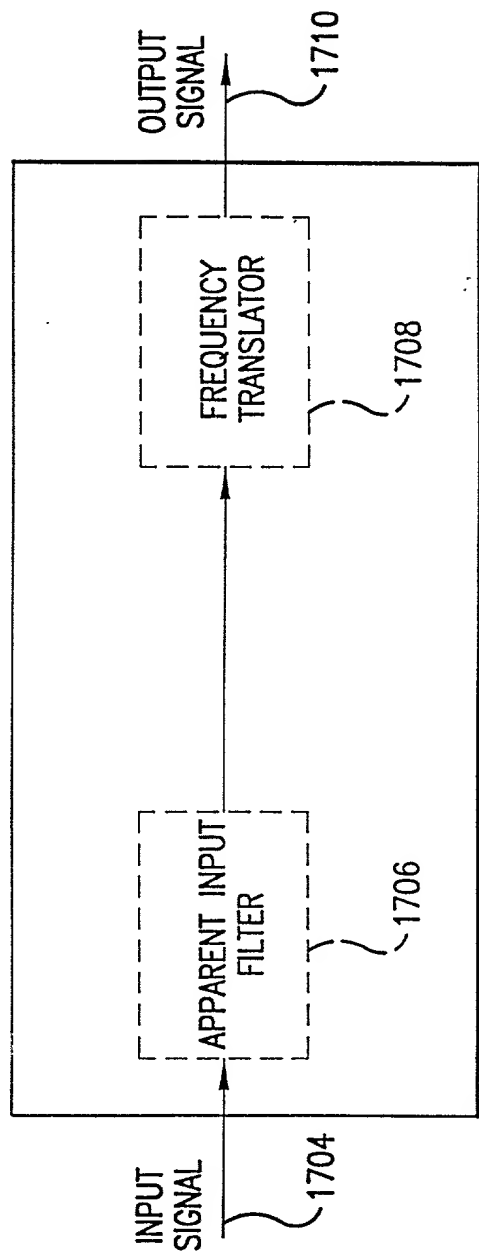


FIG. 17

1802

TIME NODE	t-1 (RISING EDGE OF ϕ_1)	t-1 (RISING EDGE OF ϕ_2)	t (RISING EDGE OF ϕ_1)	t (RISING EDGE OF ϕ_2)	t+1 (RISING EDGE OF ϕ_1)
1902	$V_{I,t-1}$ 1804	$V_{I,t-1}$ 1808	$V_{I,t}$ 1816	$V_{I,t}$ 1826	$V_{I,t+1}$ 1838
1904	—	$V_{I,t-1}$ 1810	$V_{I,t-1}$ 1818	$V_{I,t}$ 1828	$V_{I,t}$ 1840
1906	$V_{O,t-1}$ 1806	$V_{O,t-1}$ 1812	$V_{O,t}$ 1820	$V_{O,t}$ 1830	$V_{O,t+1}$ 1842
1908	—	$V_{O,t-1}$ 1814	$V_{O,t-1}$ 1822	$V_{O,t}$ 1832	$V_{O,t}$ 1844
1910	— 1807	—	$V_{O,t-1}$ 1824	$V_{O,t-1}$ 1834	$V_{O,t}$ 1846
1912	—	— 1815	—	$V_{O,t-1}$ 1836	$V_{O,t-1}$ 1848
1918	—	—	—	—	$V_{I,t} - 1850$ $0.1 * V_{O,t} -$ $0.8 * V_{O,t-1}$

FIG. 18

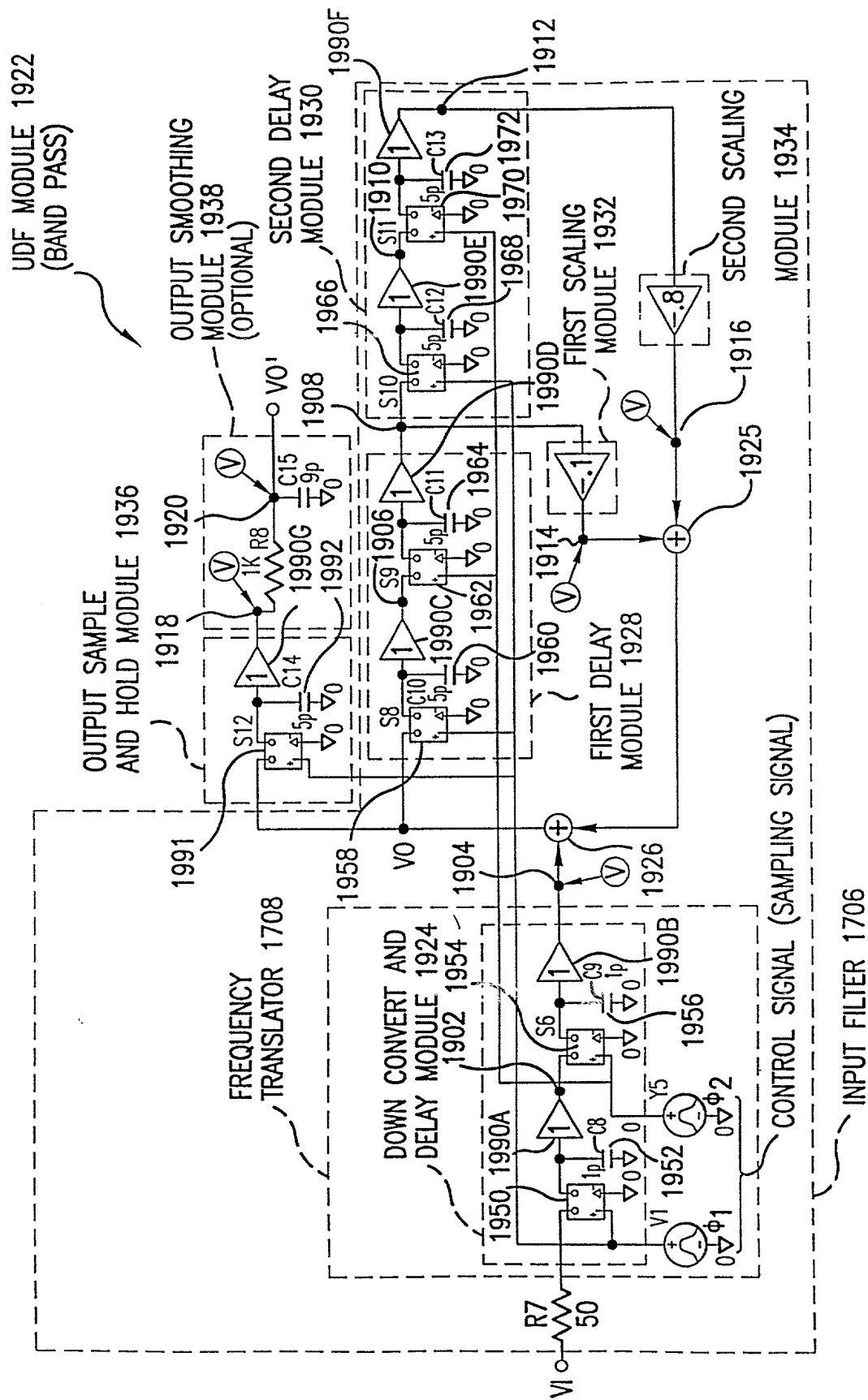


FIG. 19

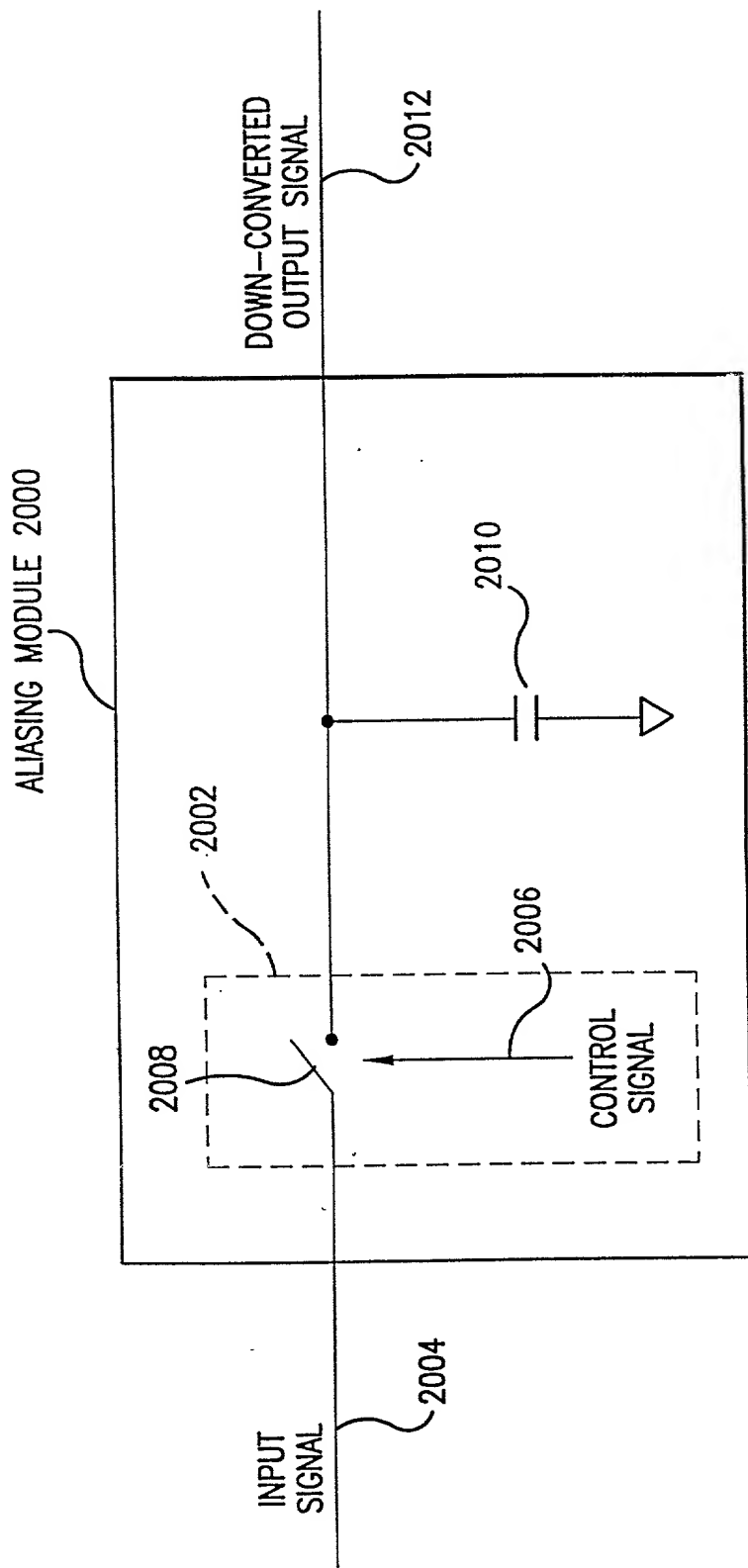


FIG. 20A

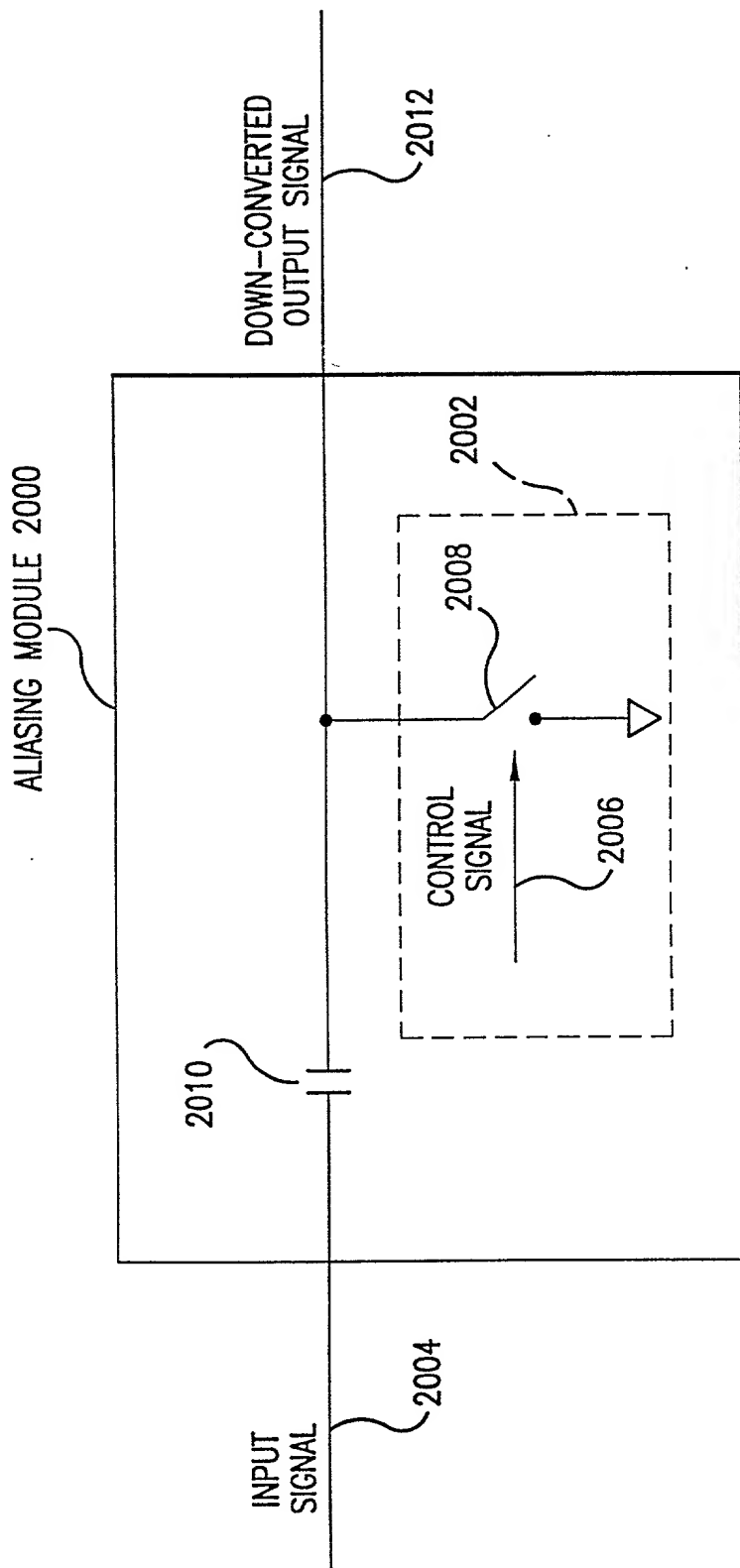


FIG. 20A-1

The graph shows a line representing the number of people in the labor force from 2020 to 2024. The y-axis is labeled 'to 2022' and the x-axis is labeled '2024'. The line starts at a point in 2020, rises slightly, then shows a sharp drop in 2021, followed by a gradual recovery and a slight increase in 2024.

FIG. 20F

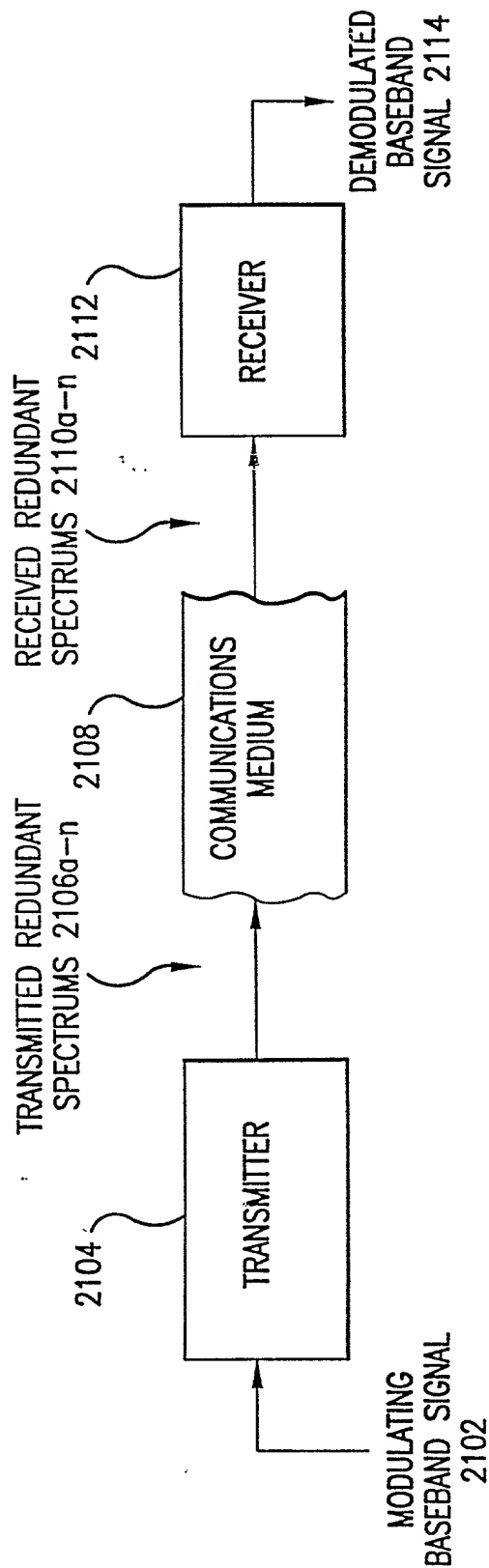


FIG. 21

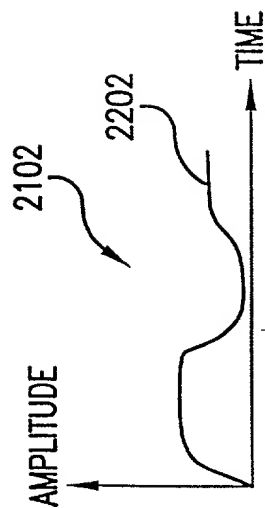


FIG. 22A

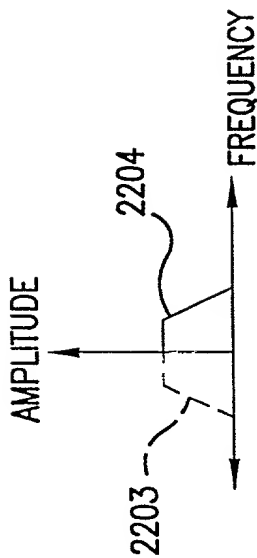


FIG. 22B

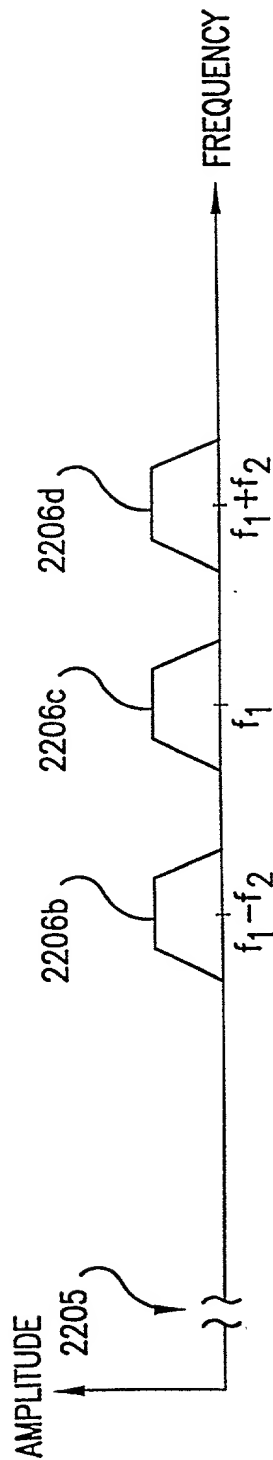


FIG. 22C

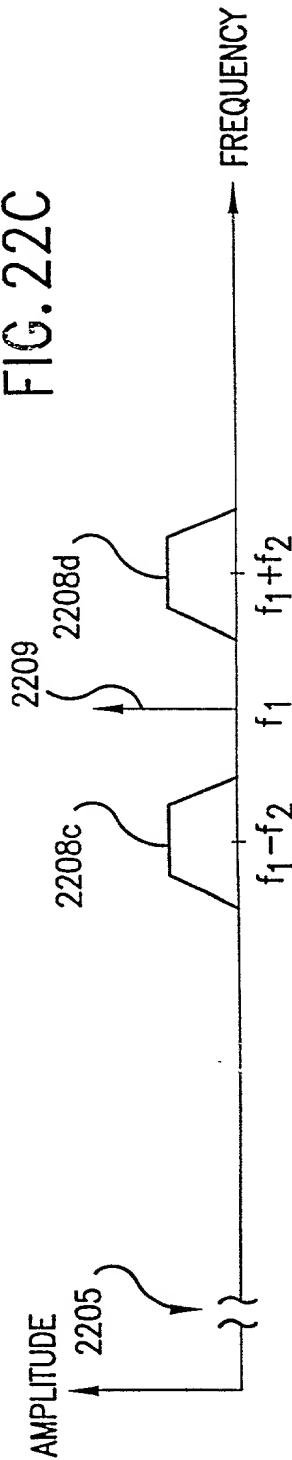


FIG. 22D

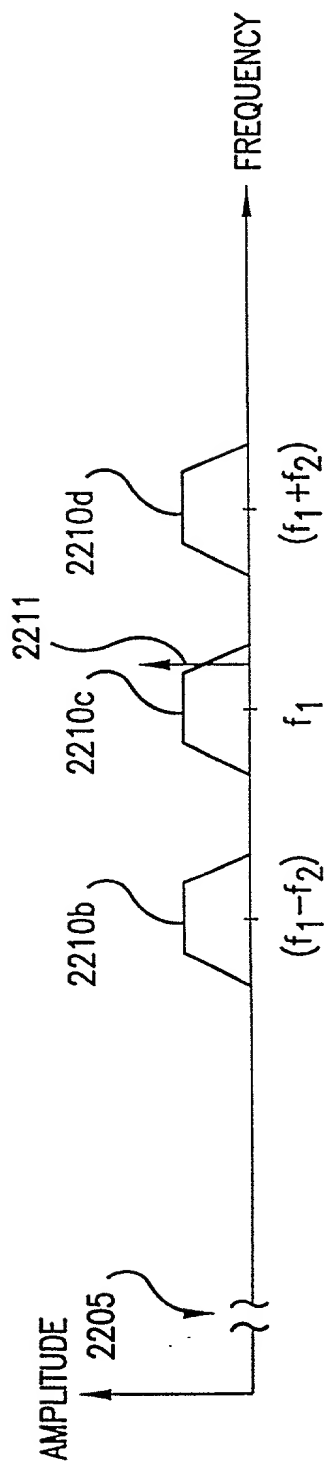


FIG. 22E

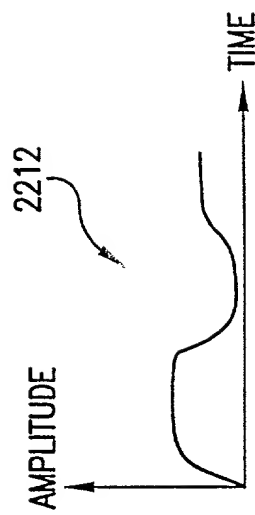


FIG. 22F

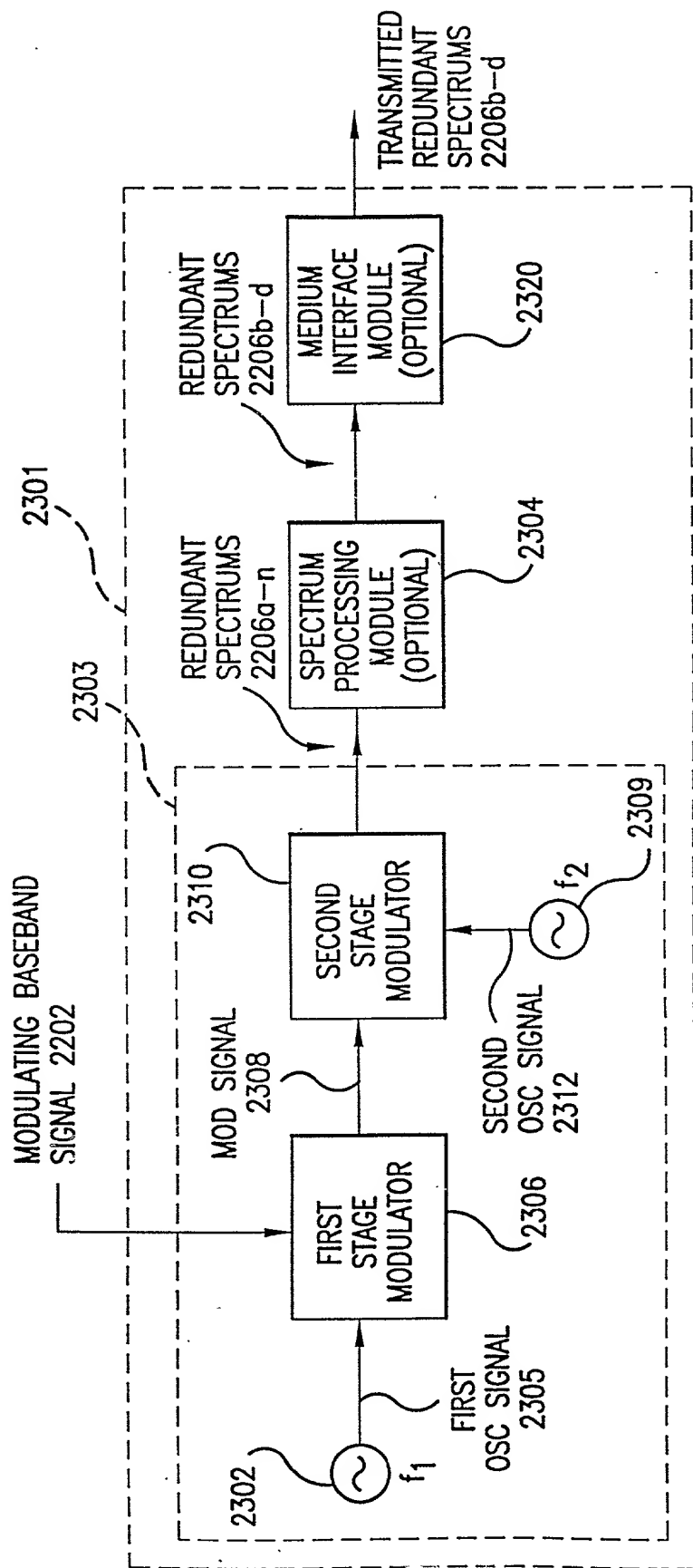


FIG. 23A

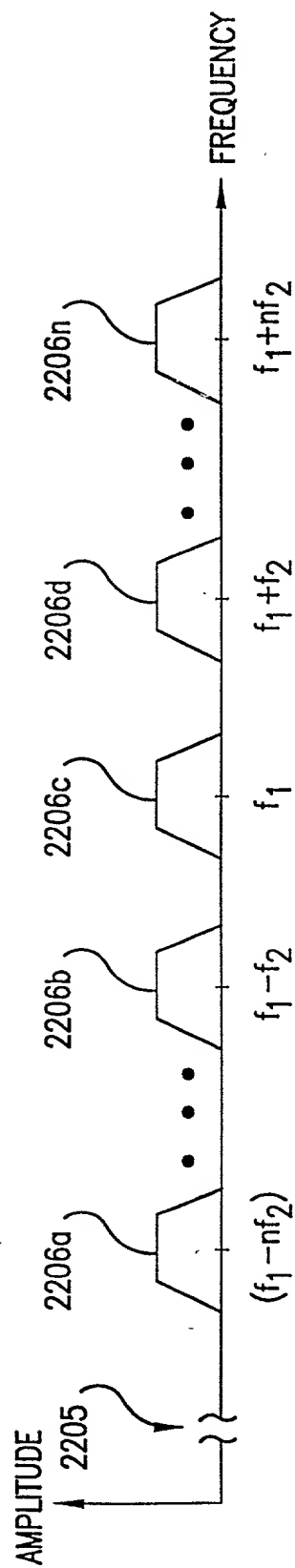


FIG. 23B

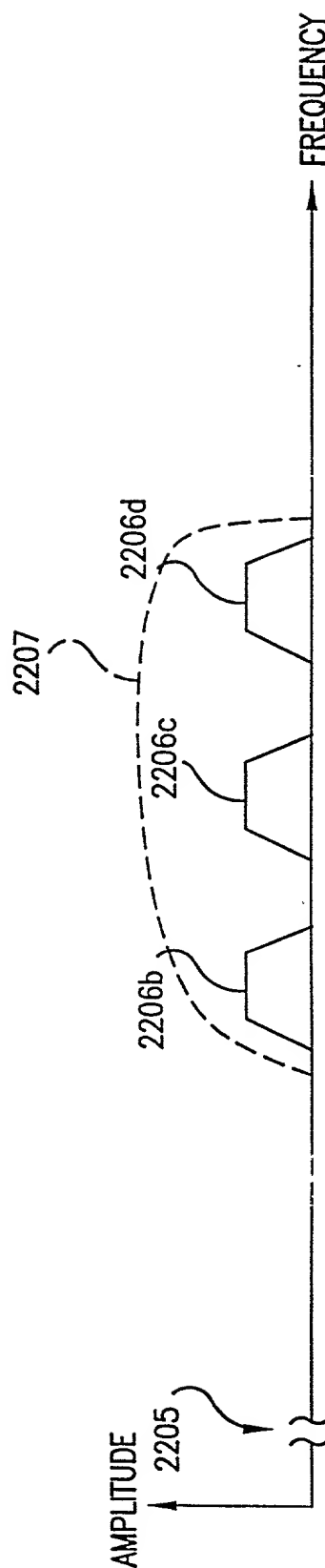


FIG. 23C

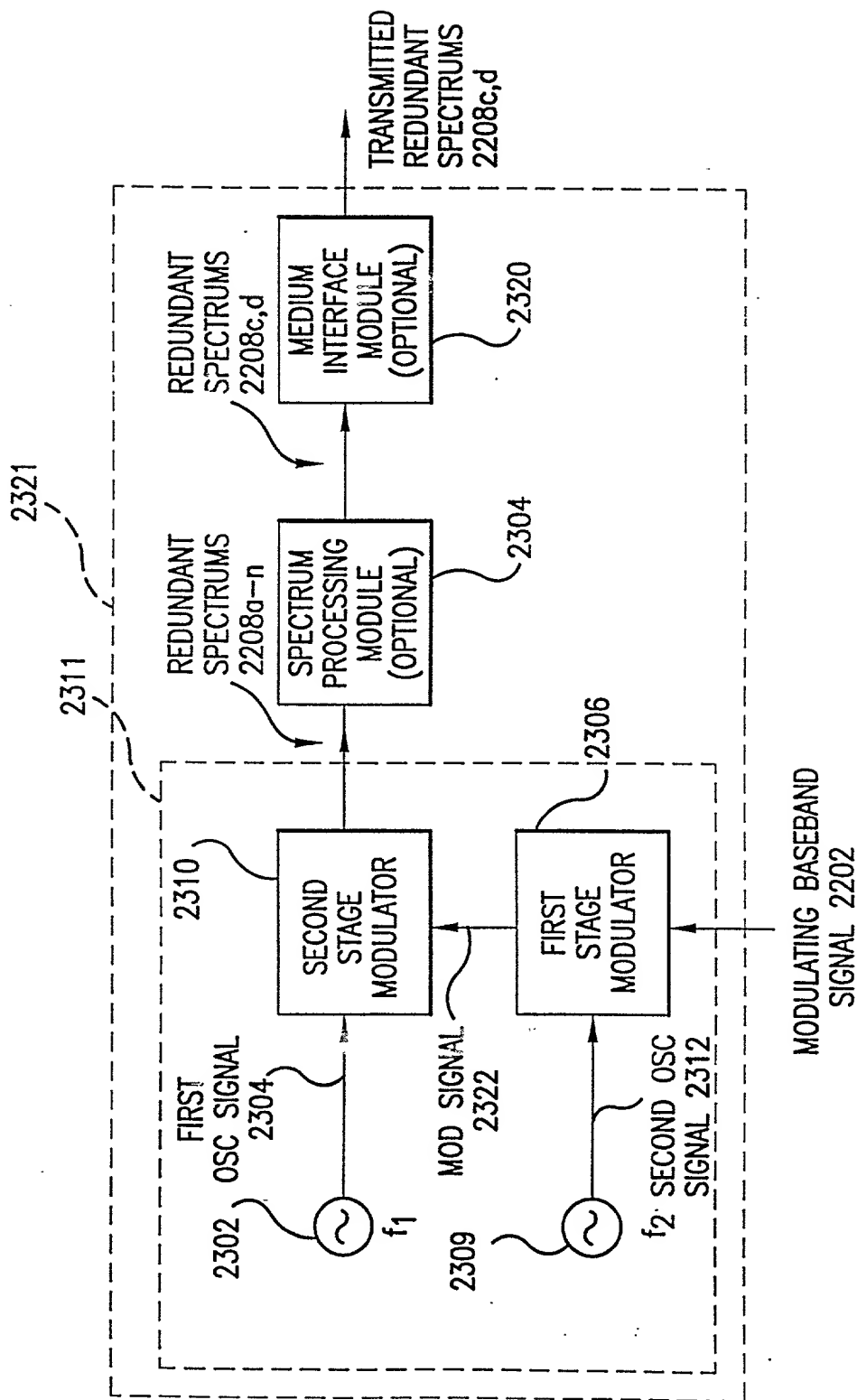


FIG. 23D

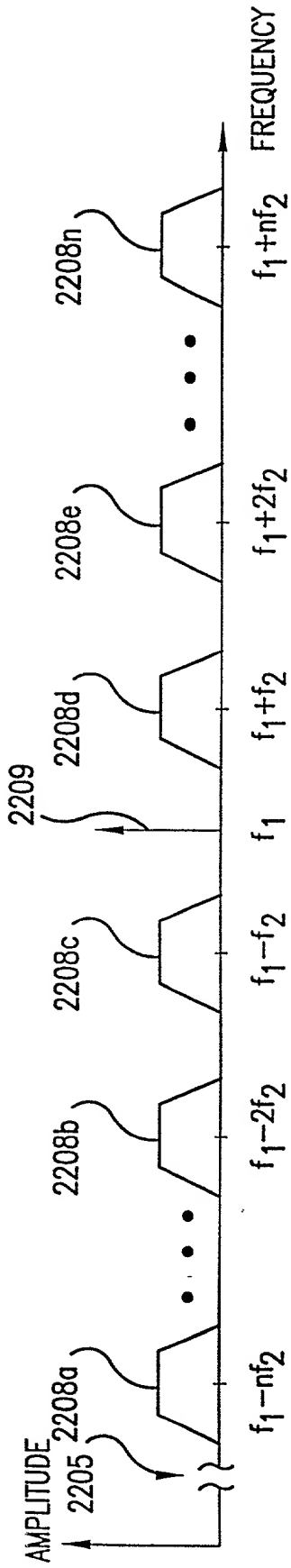


FIG. 23E

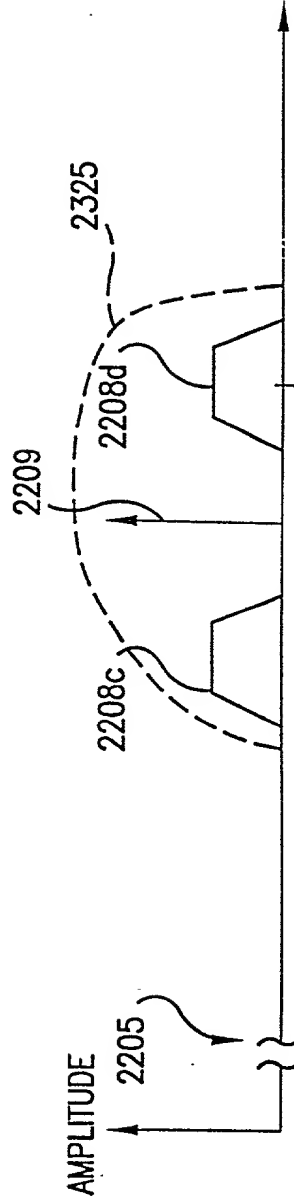


FIG. 23F

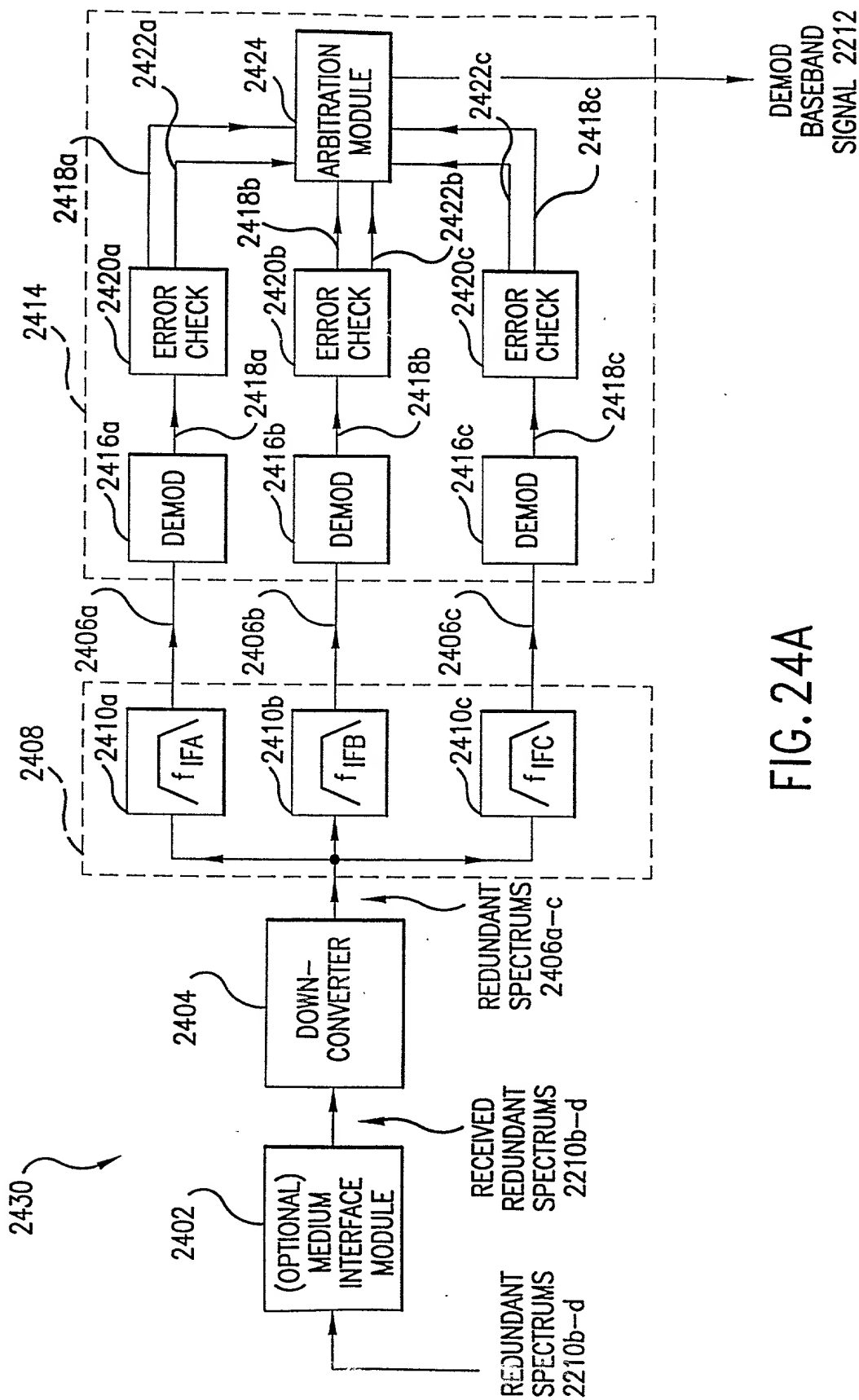


FIG. 24A

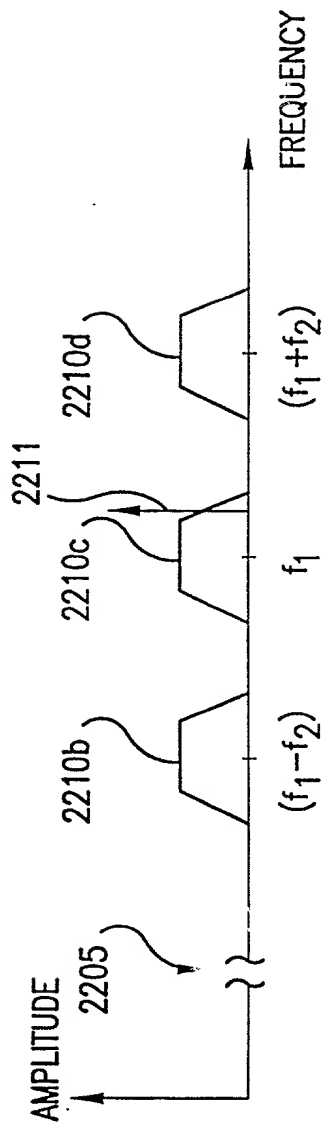


FIG. 24B

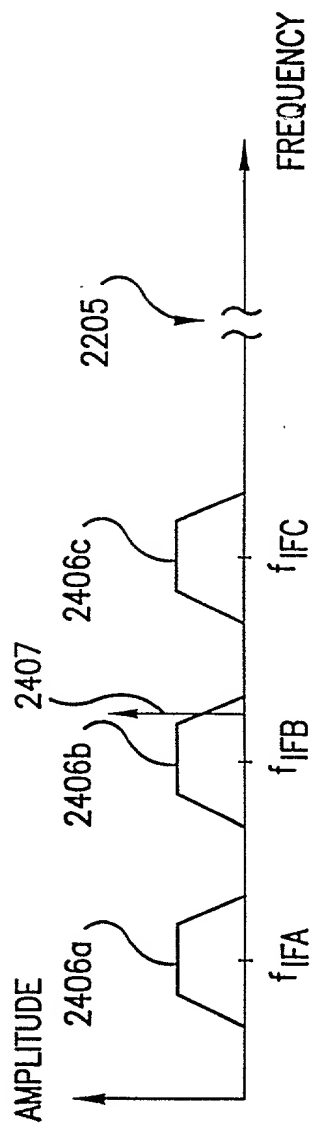


FIG. 24C

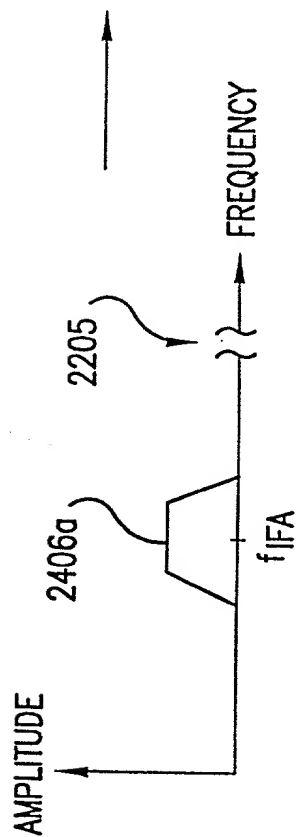


FIG. 24D

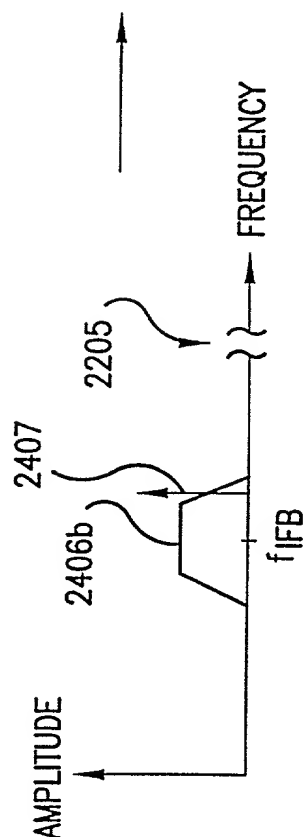


FIG. 24E

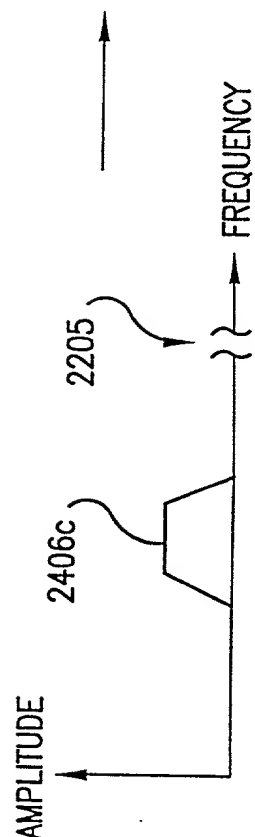


FIG. 24F

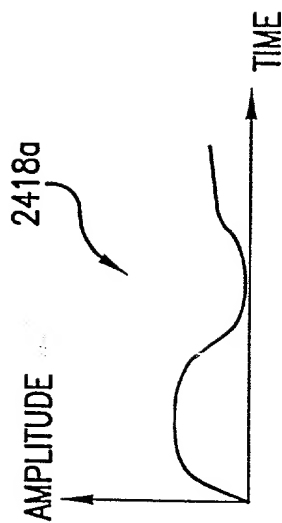


FIG. 24G

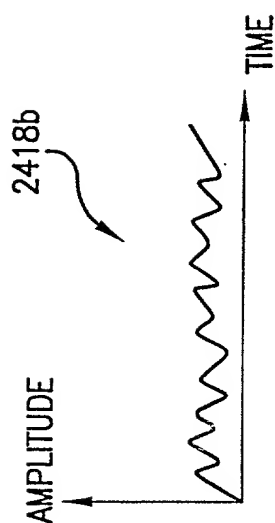


FIG. 24H

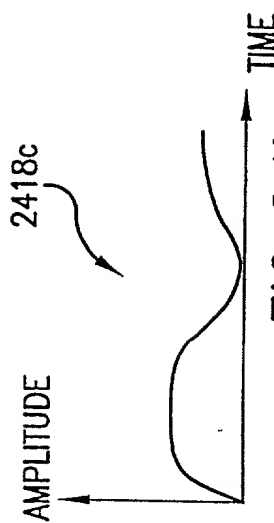


FIG. 24I

A graph with 'AMPLITUDE' on the vertical axis and 'TIME' on the horizontal axis. The signal starts at the origin, rises to a peak, then falls to a local minimum, and finally rises again. An arrow points from the label '2212' to the first, higher peak of the signal.

FIG. 24J

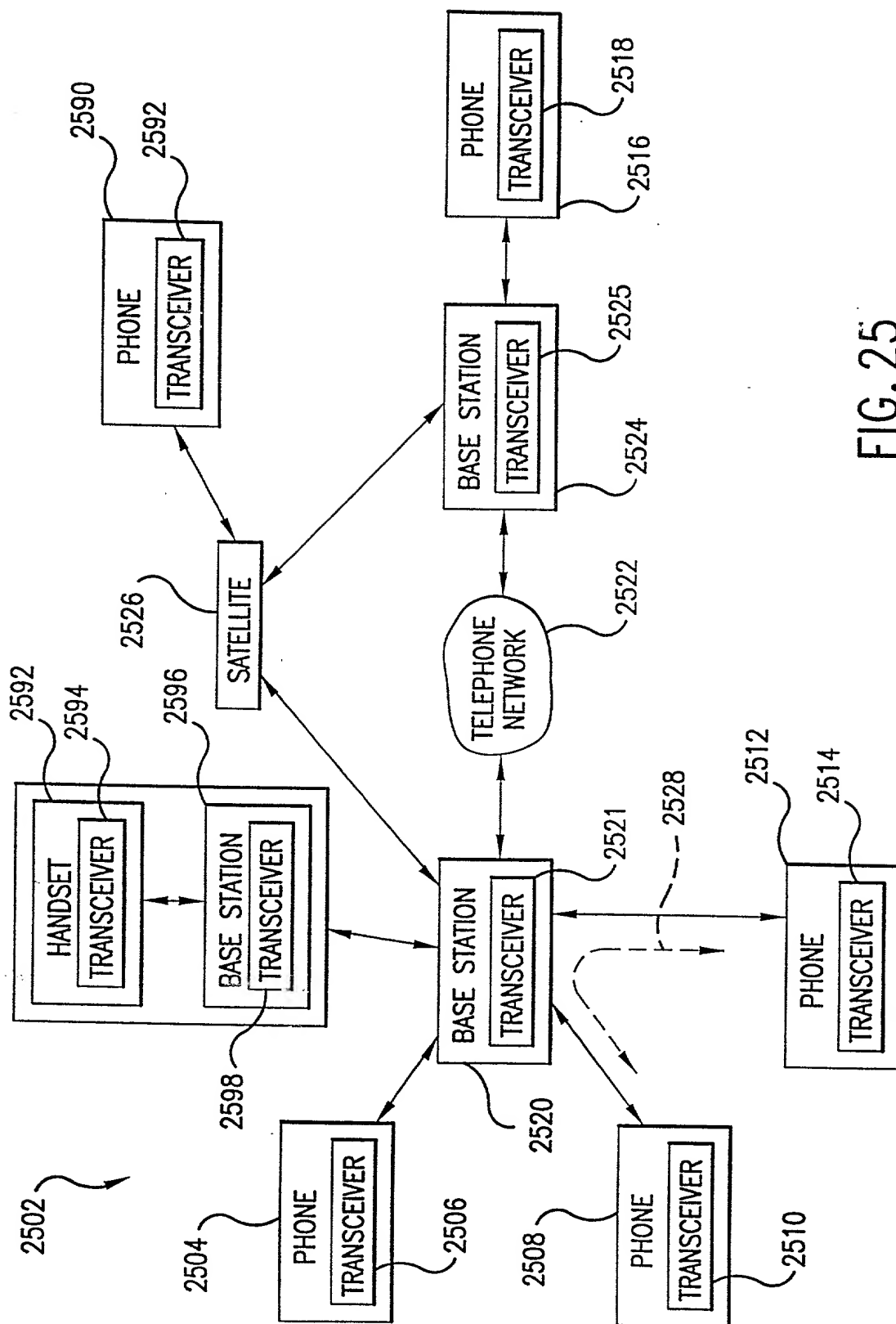


FIG. 25

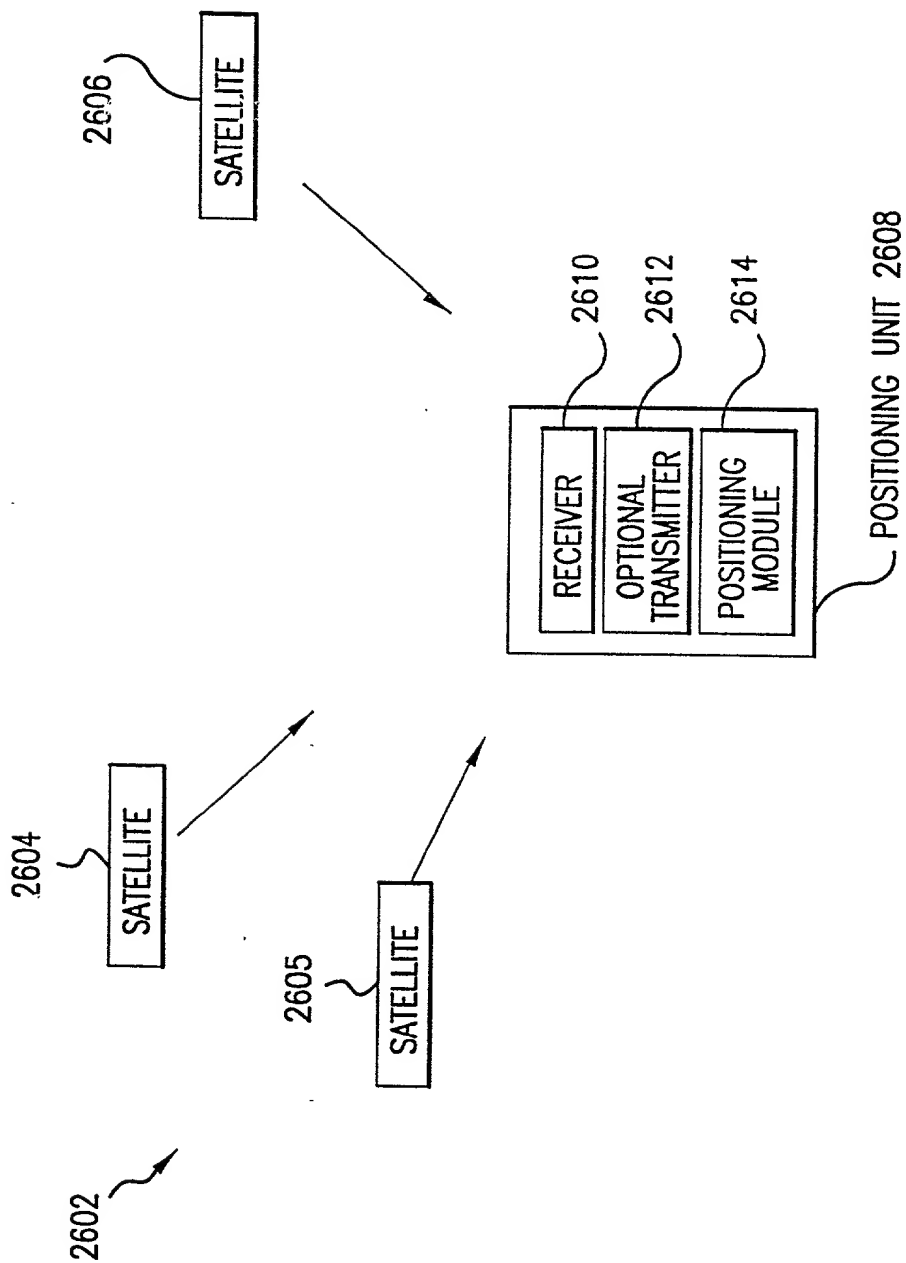


FIG. 26

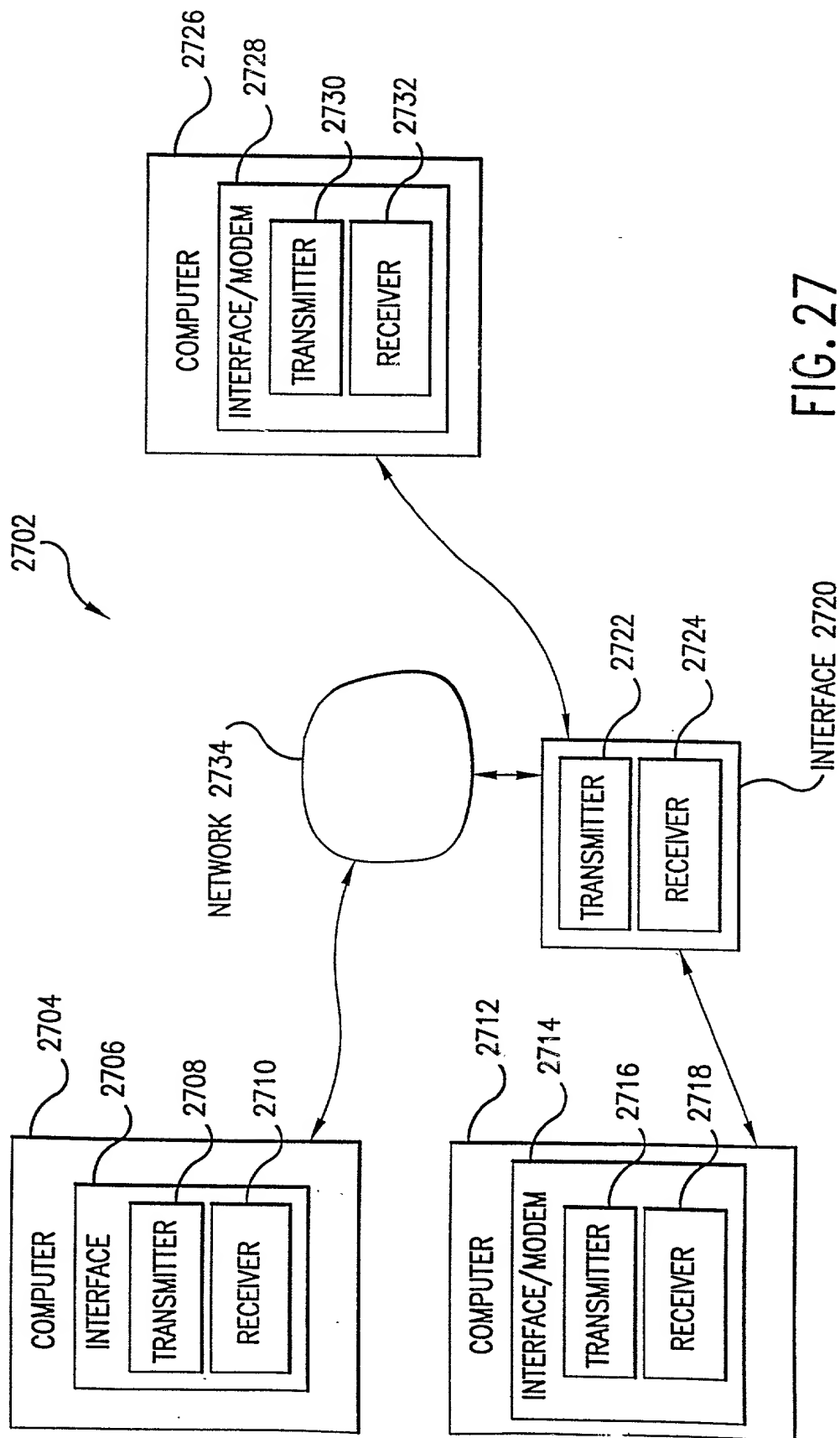


FIG. 27

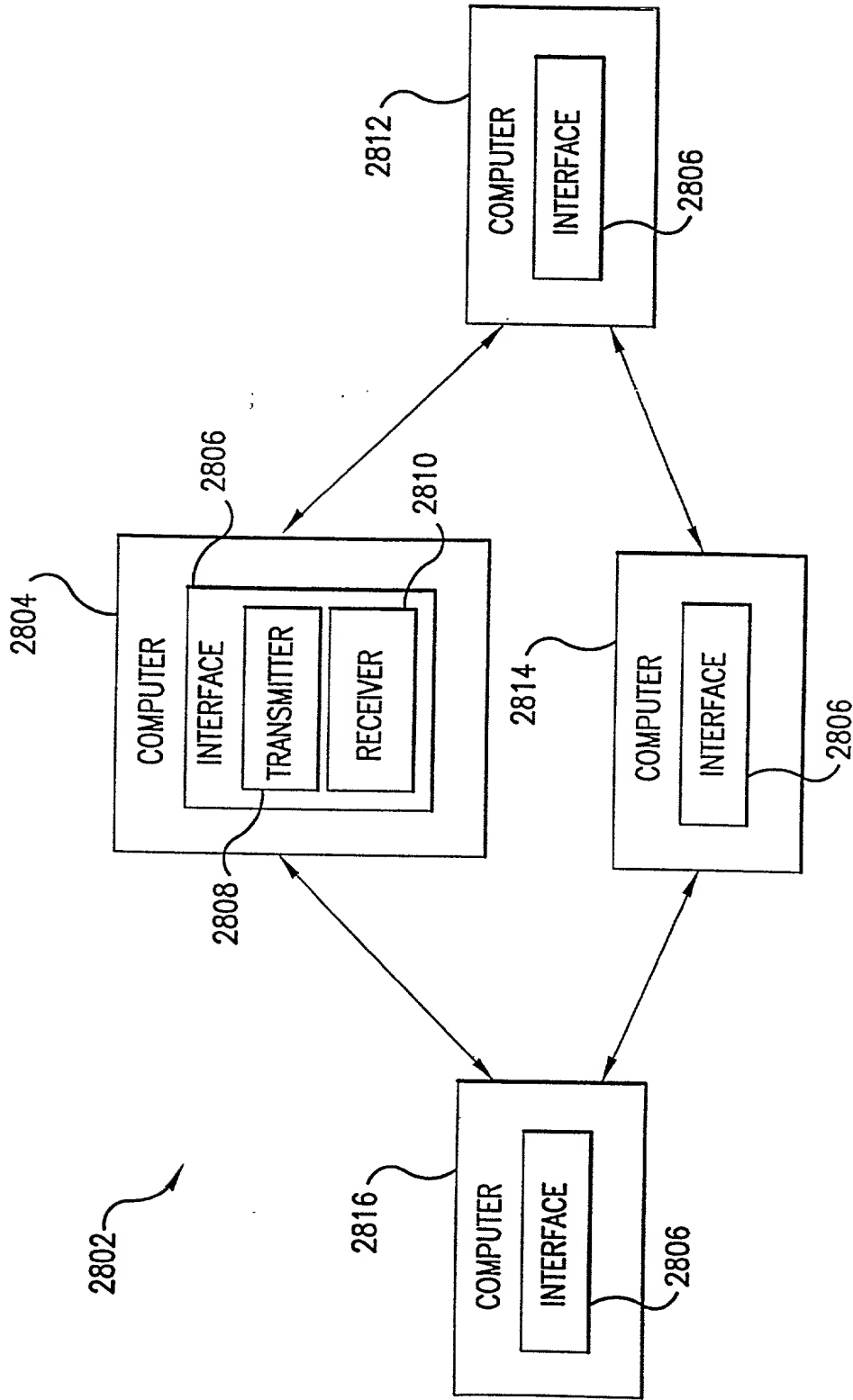


FIG. 28

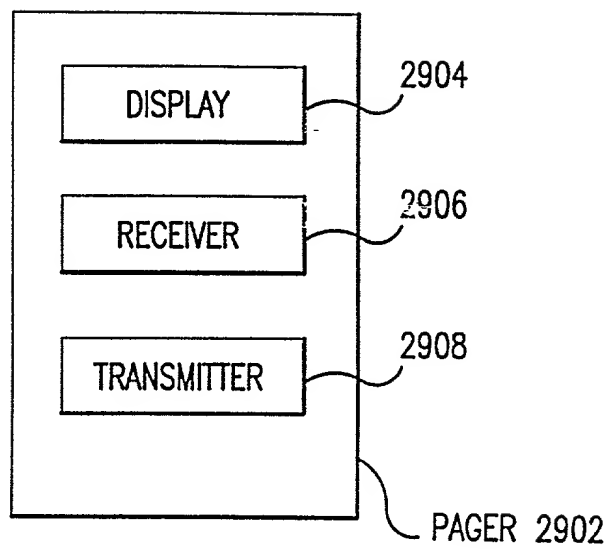


FIG. 29

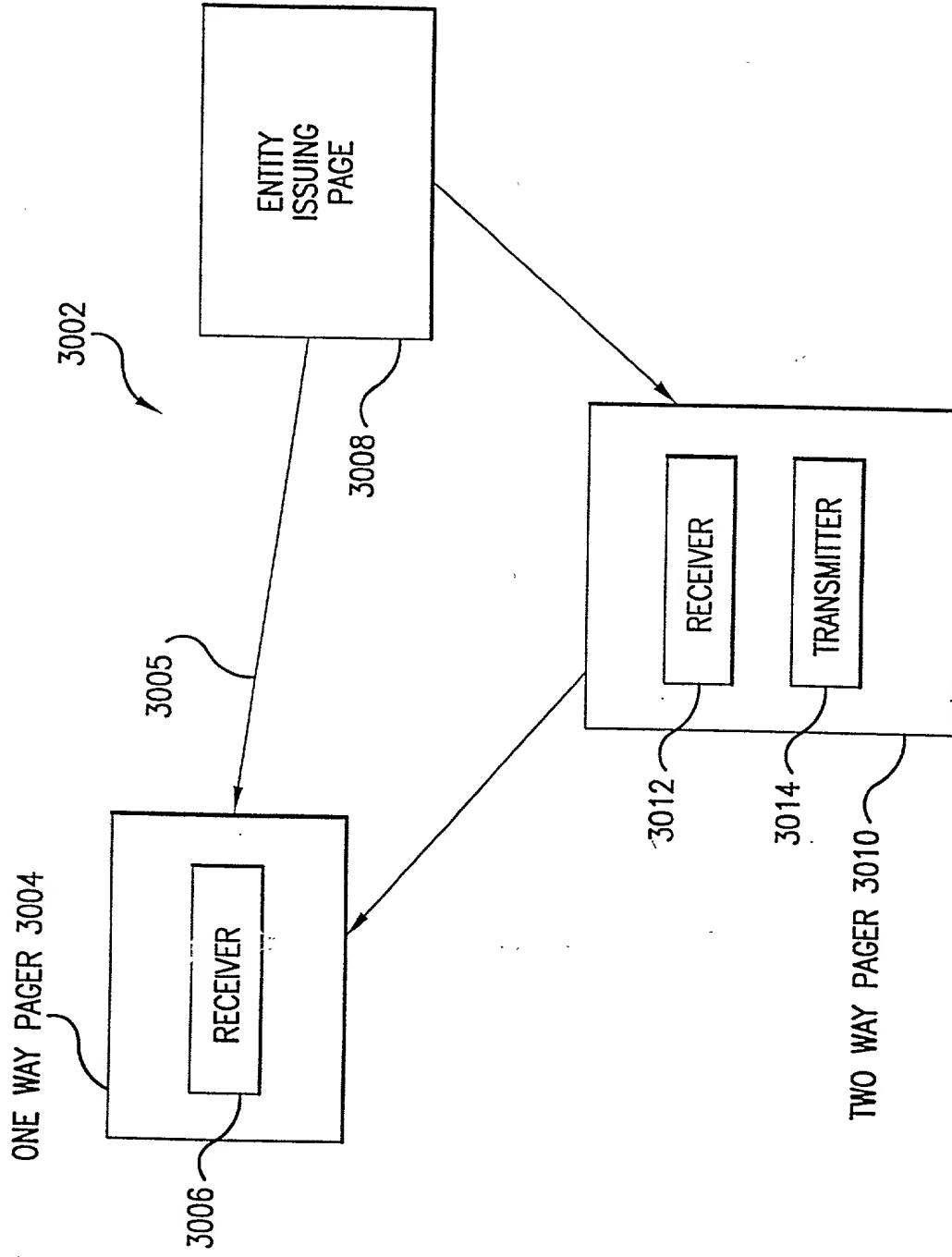


FIG. 30

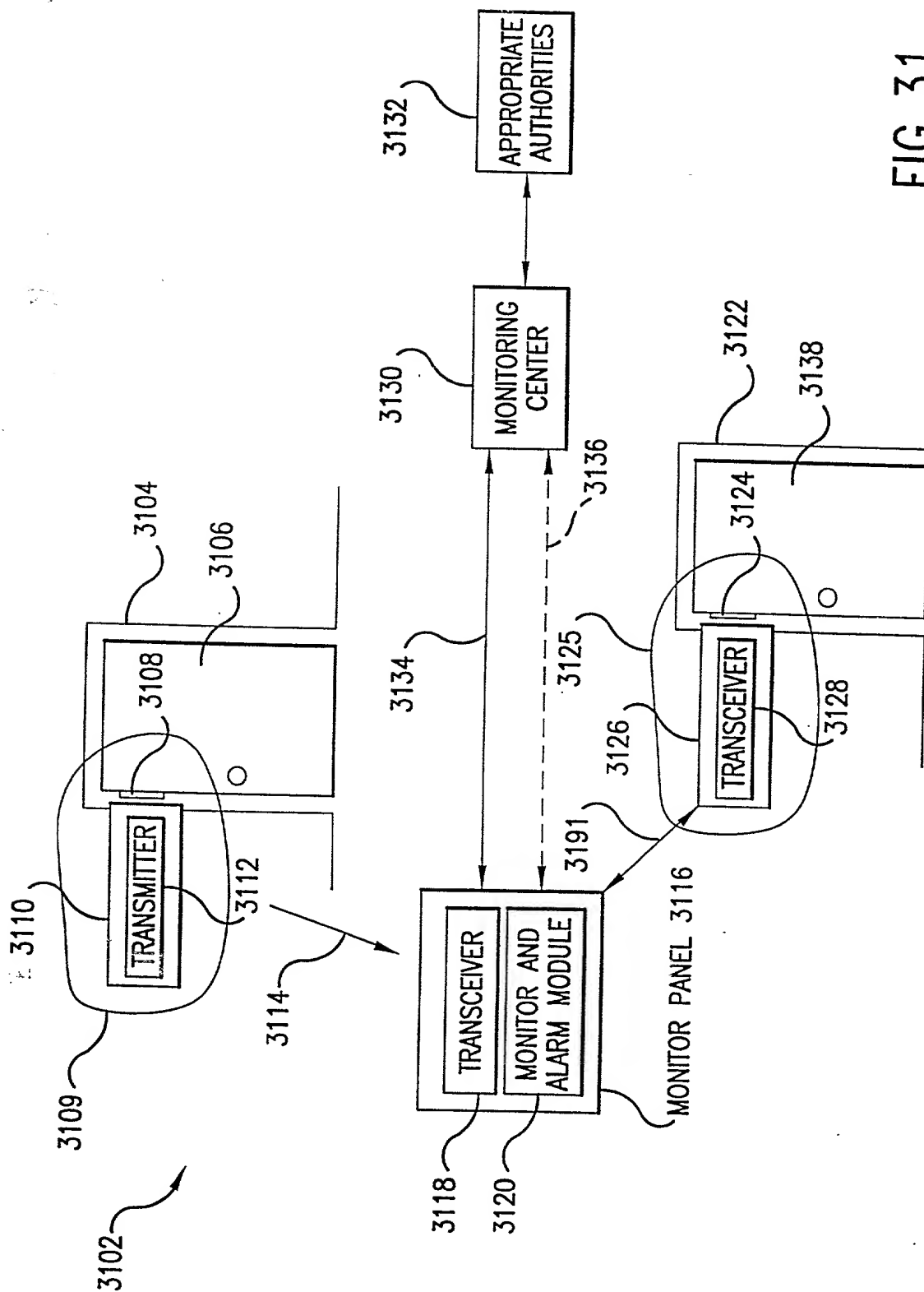


FIG. 31

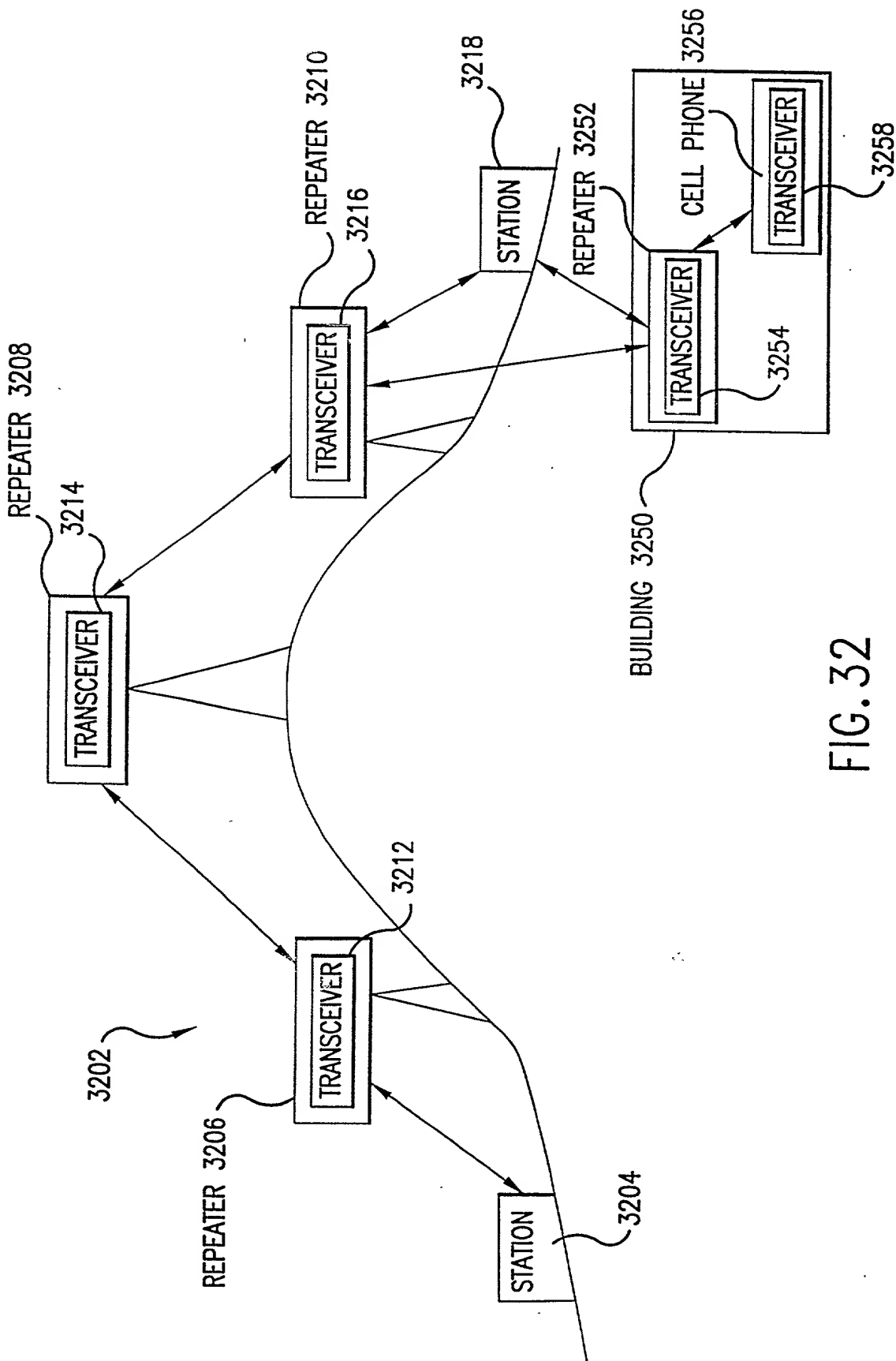


FIG. 32

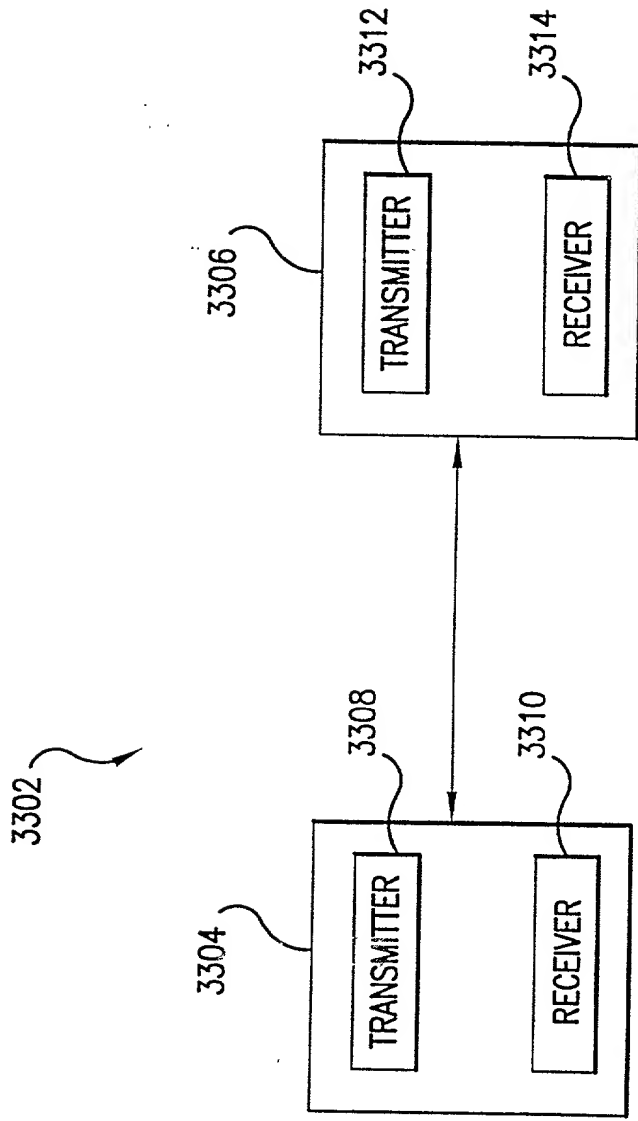


FIG. 33

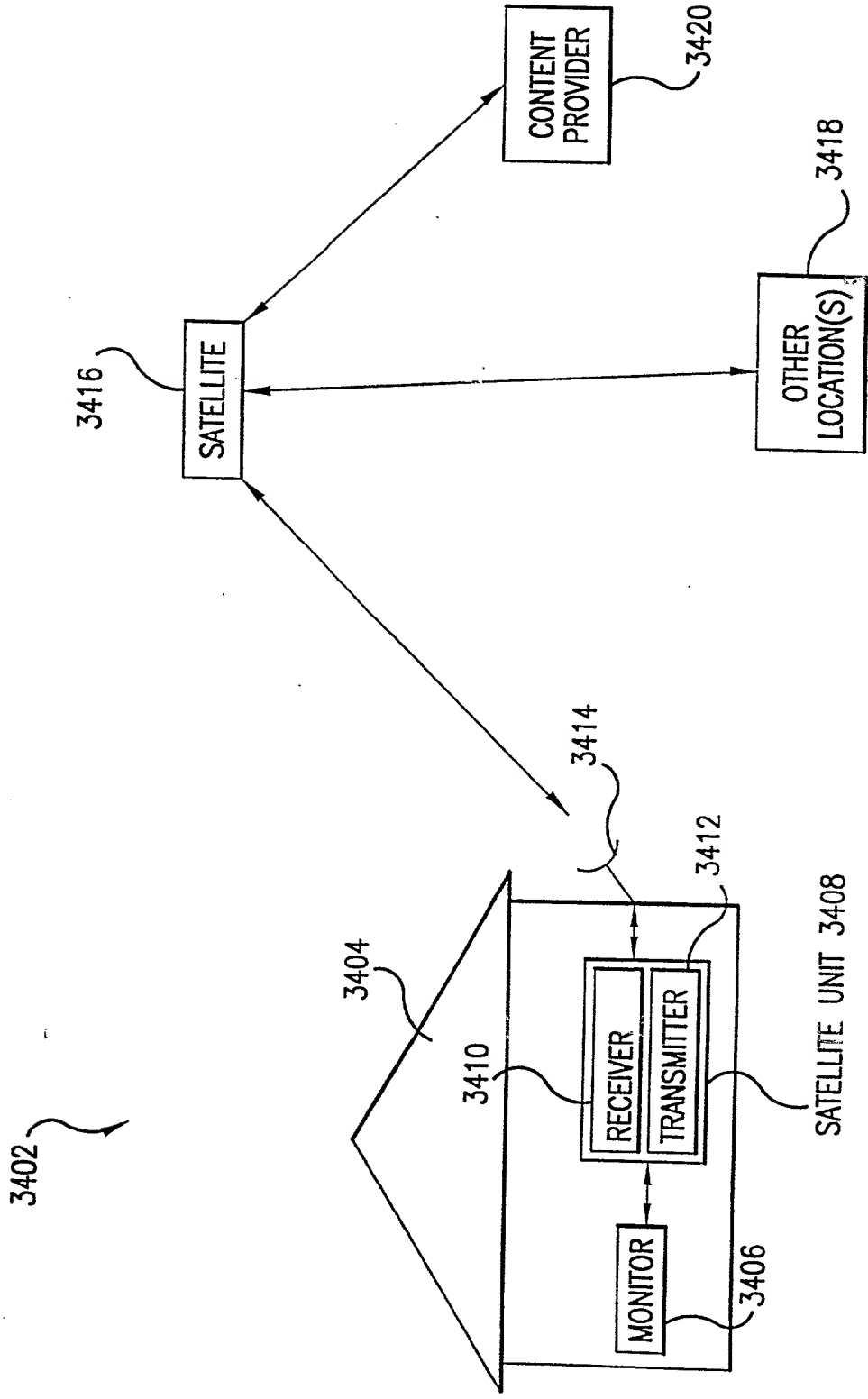


FIG. 34

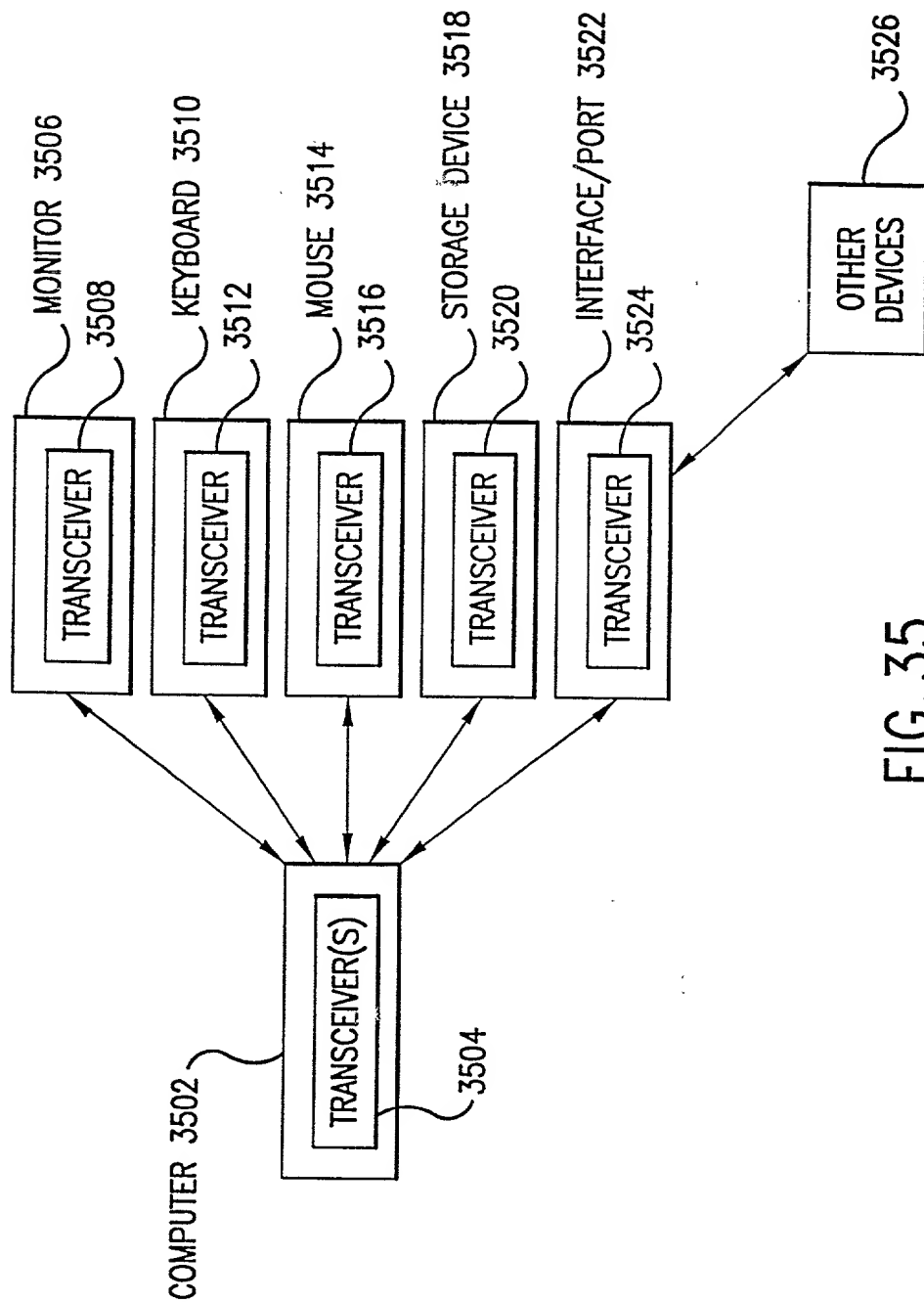


FIG. 35

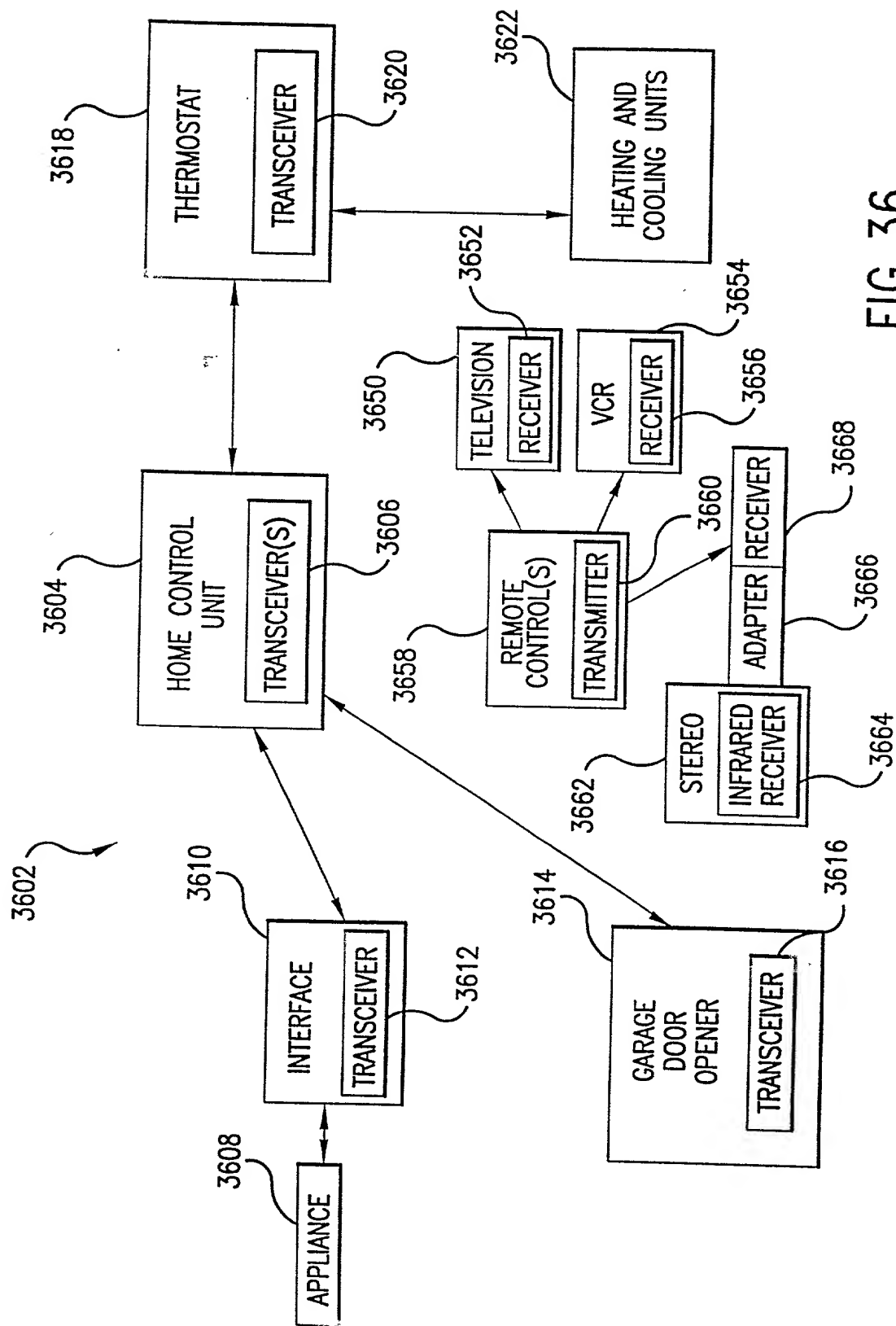


FIG. 36

3702

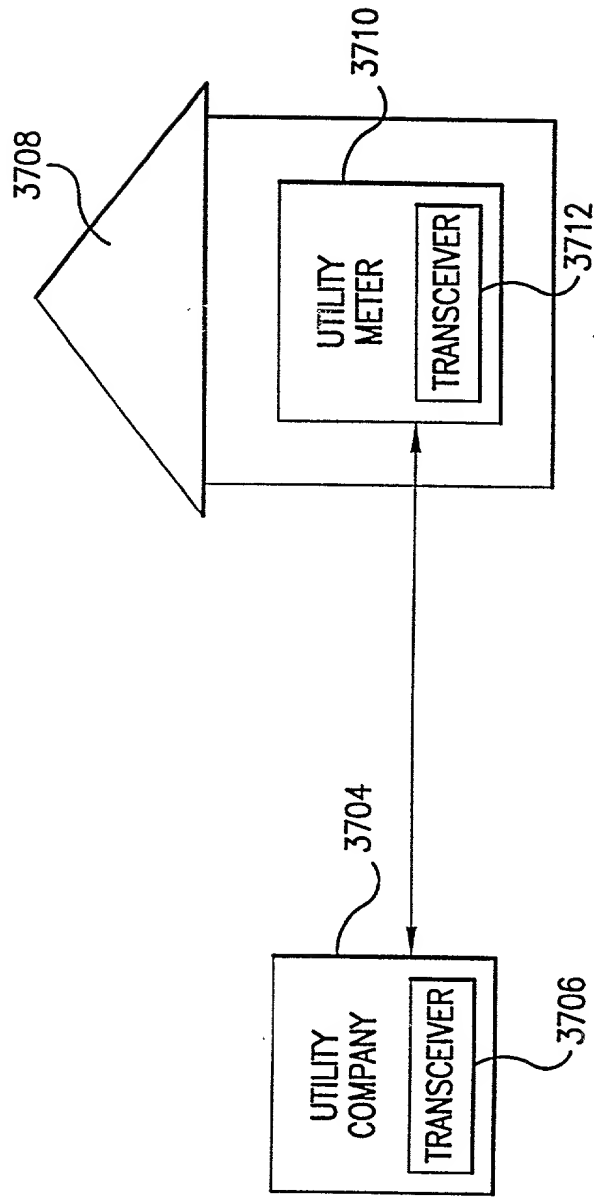


FIG. 37

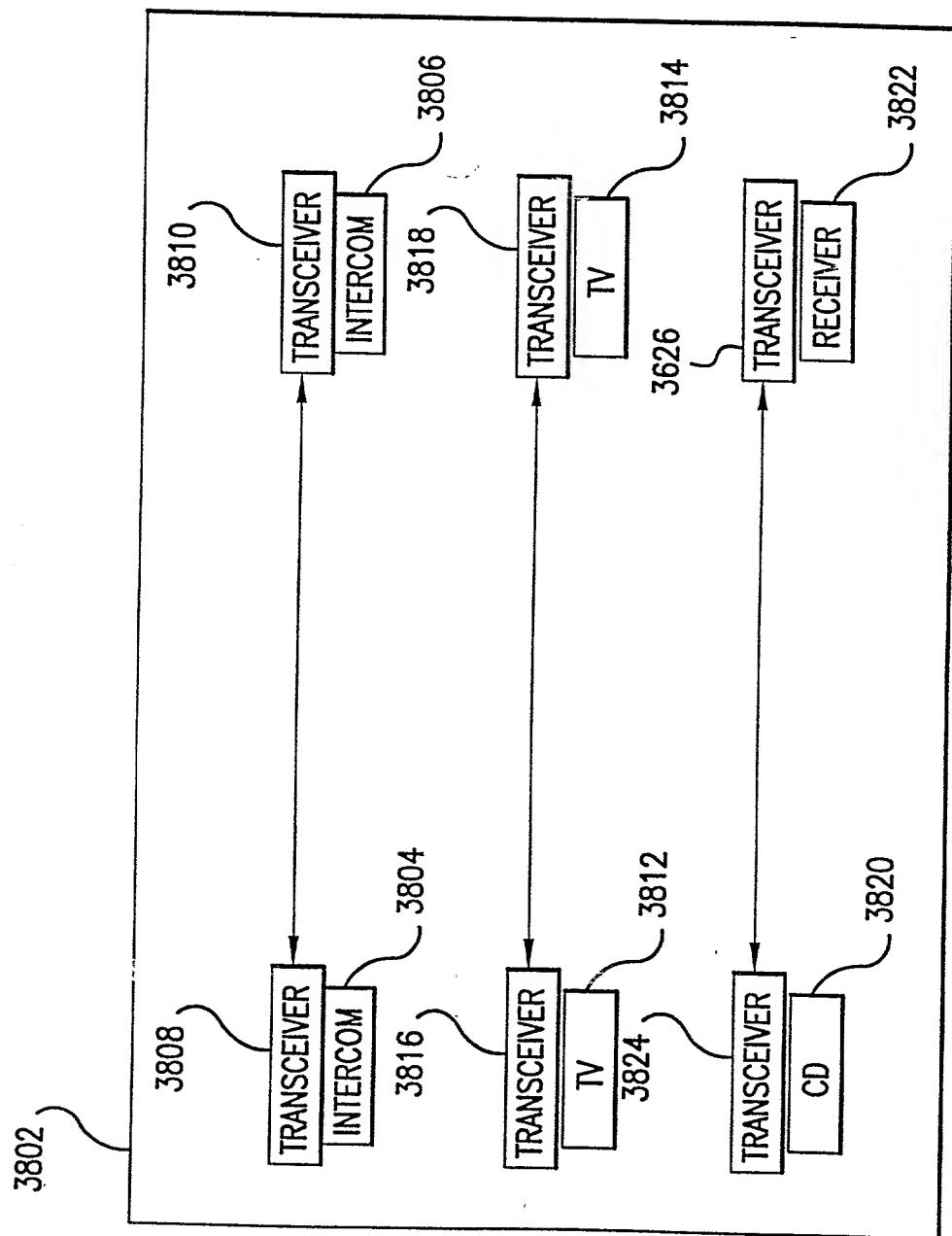


FIG. 38

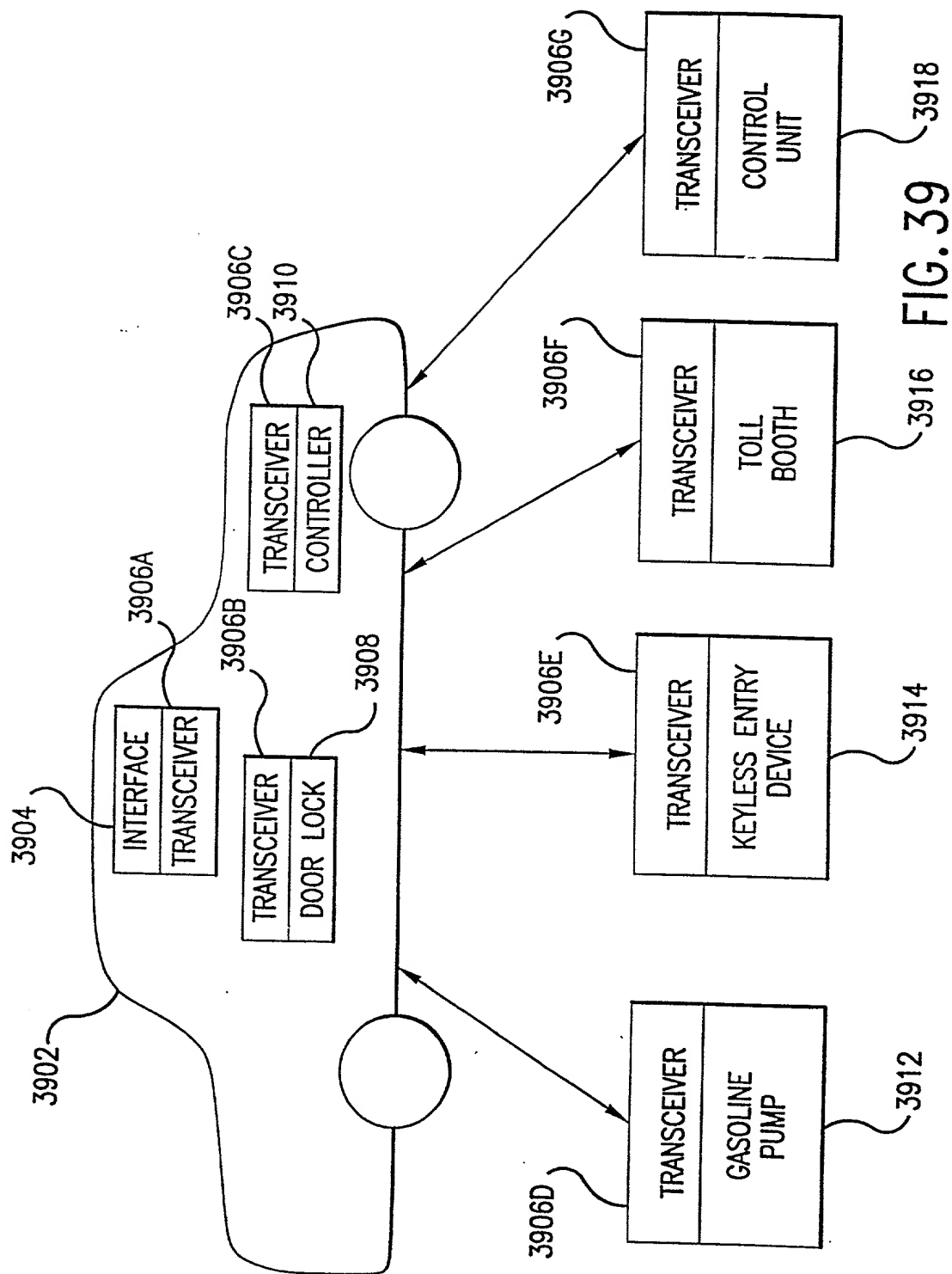


FIG. 39

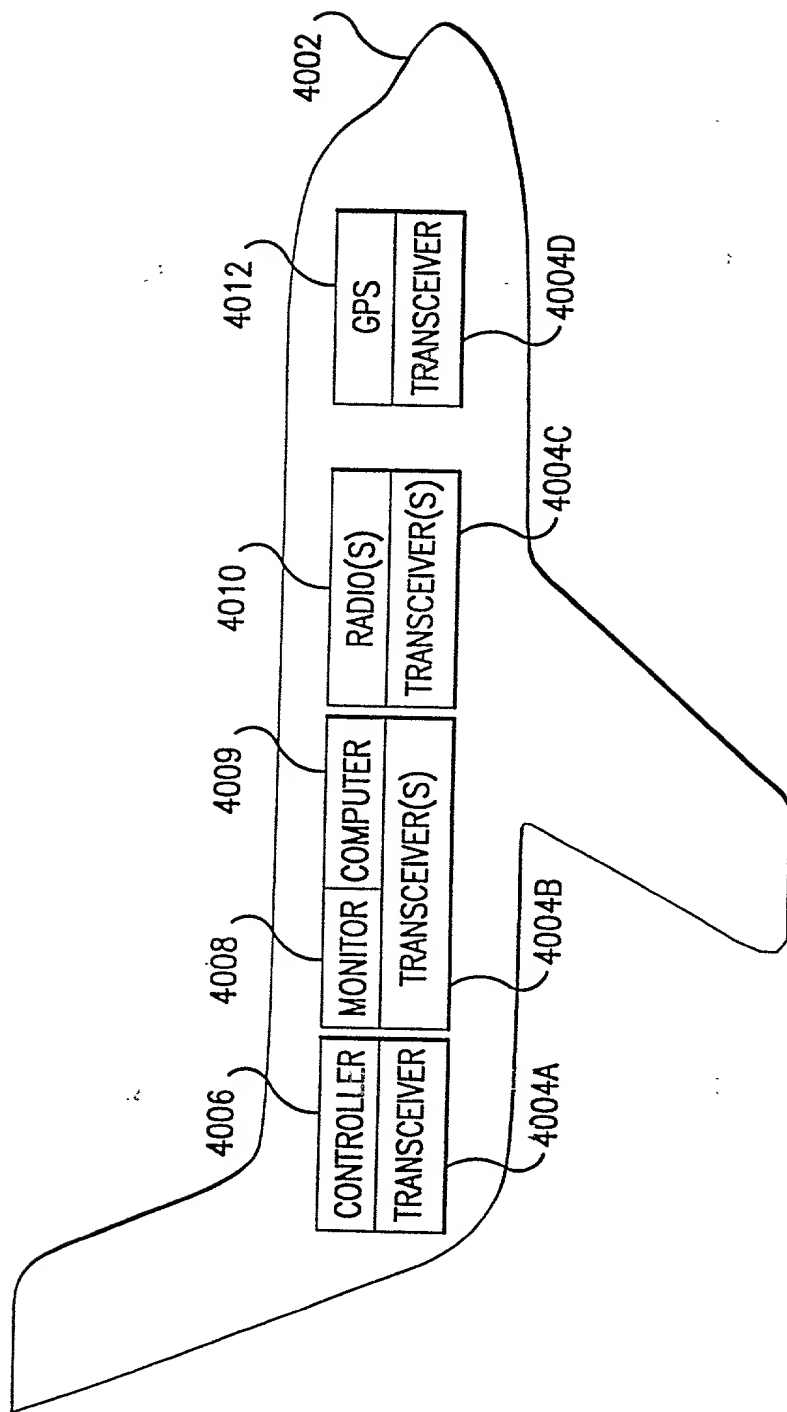


FIG. 40A

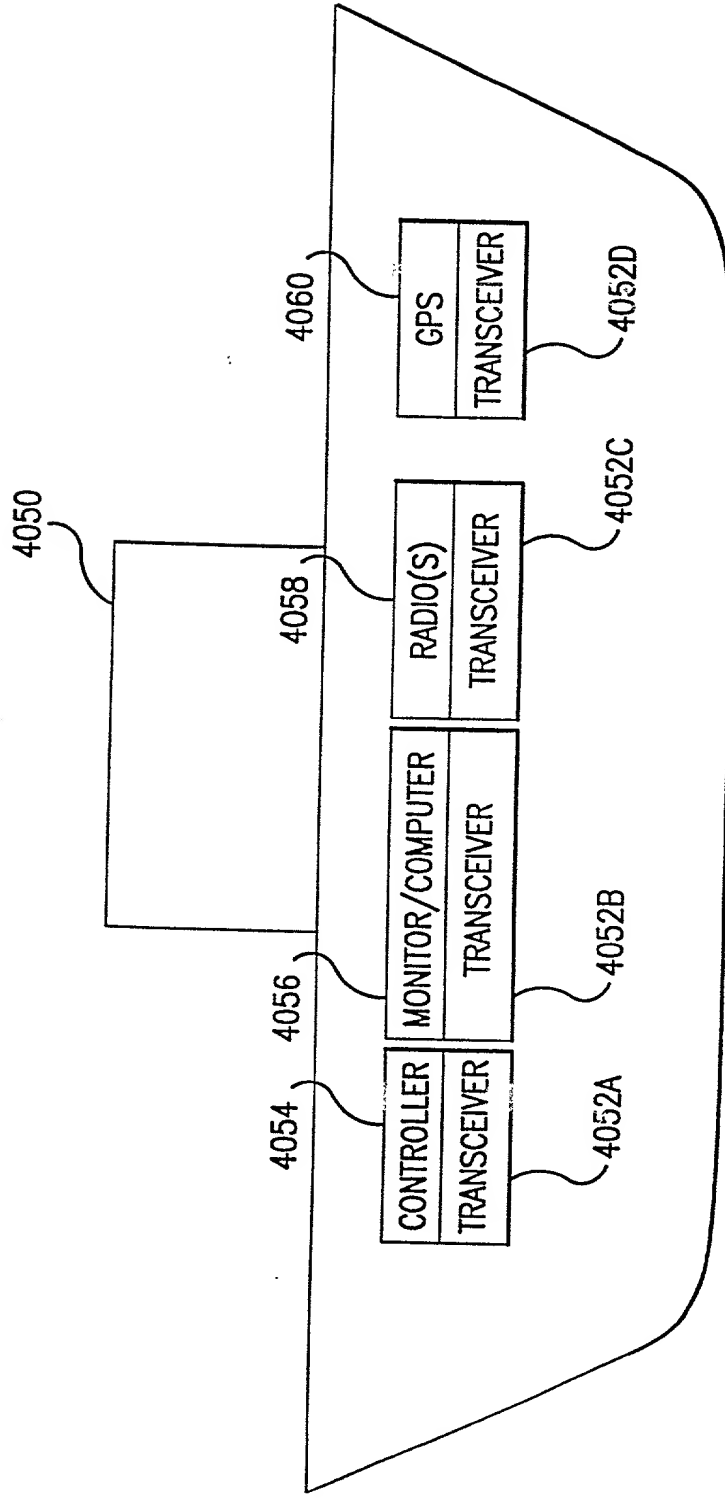


FIG. 40B

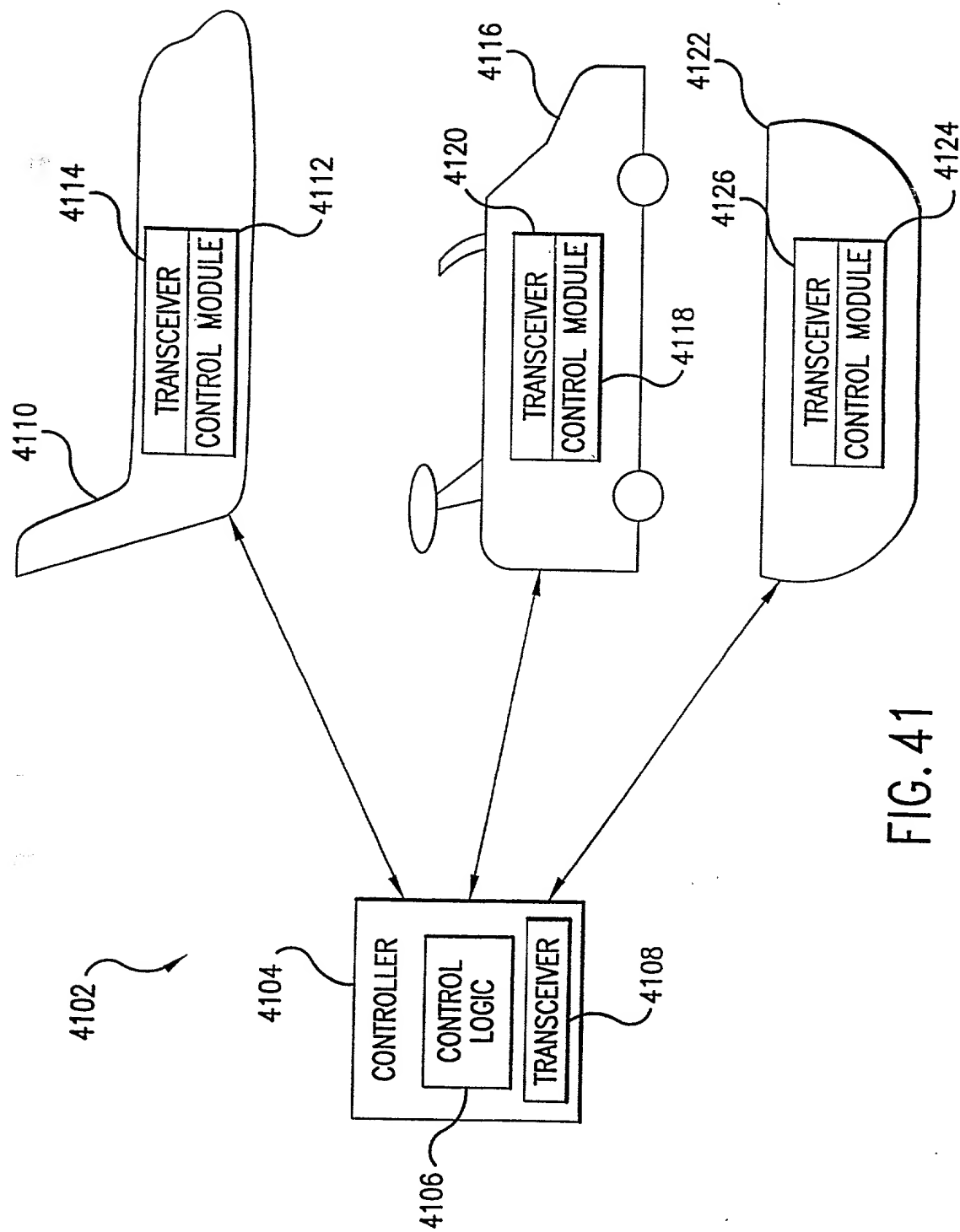


FIG. 41

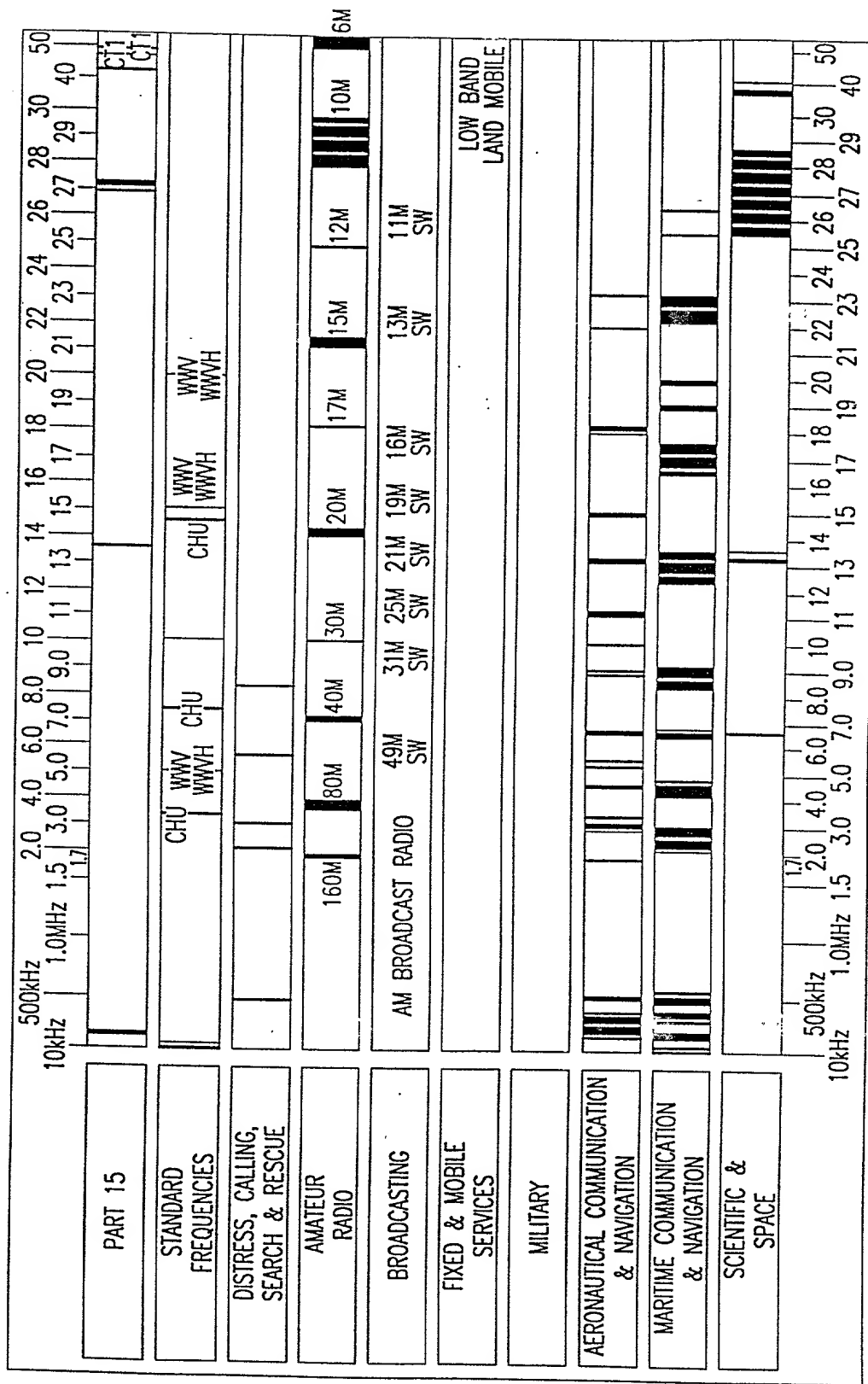


FIG. 42A

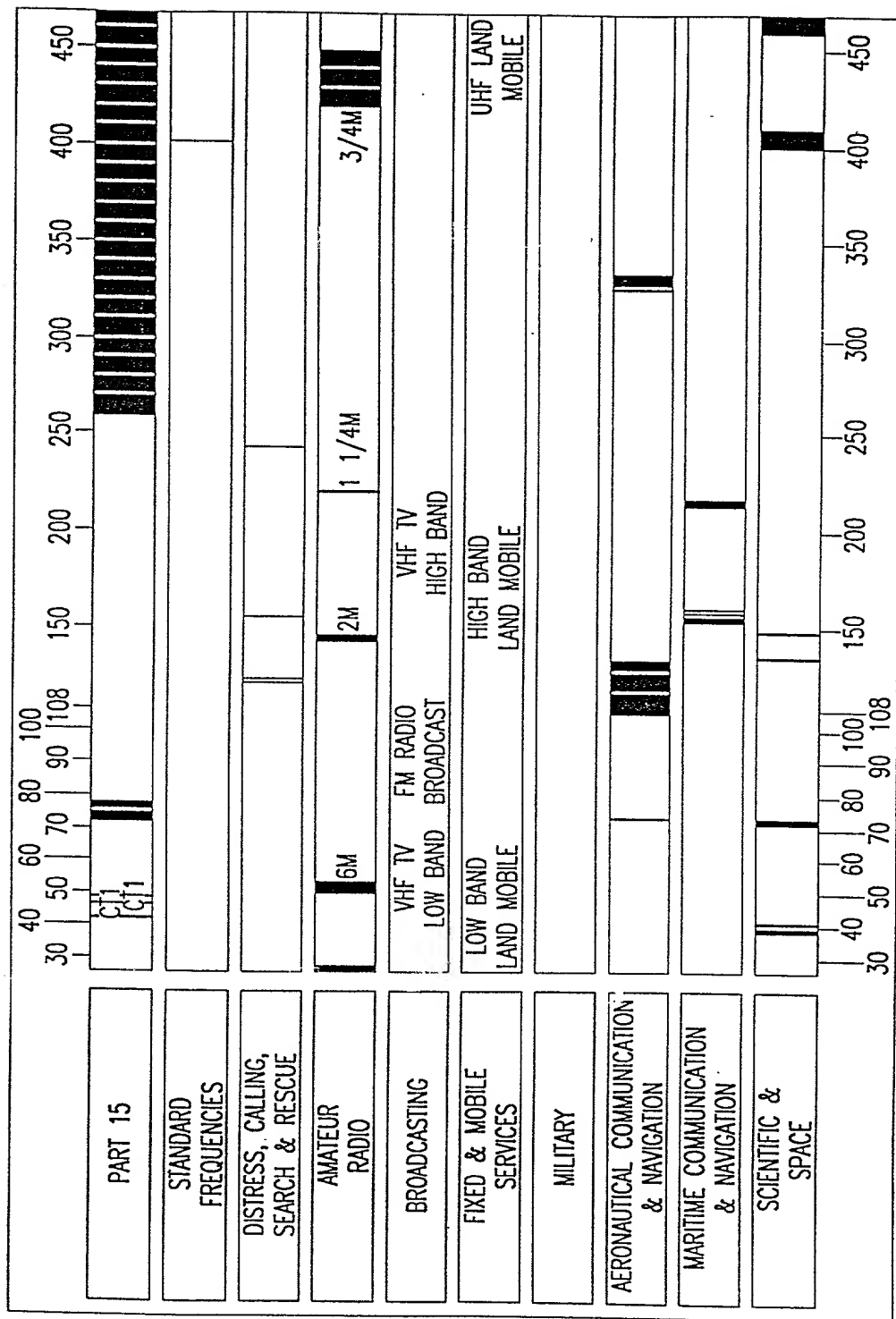


FIG. 42B

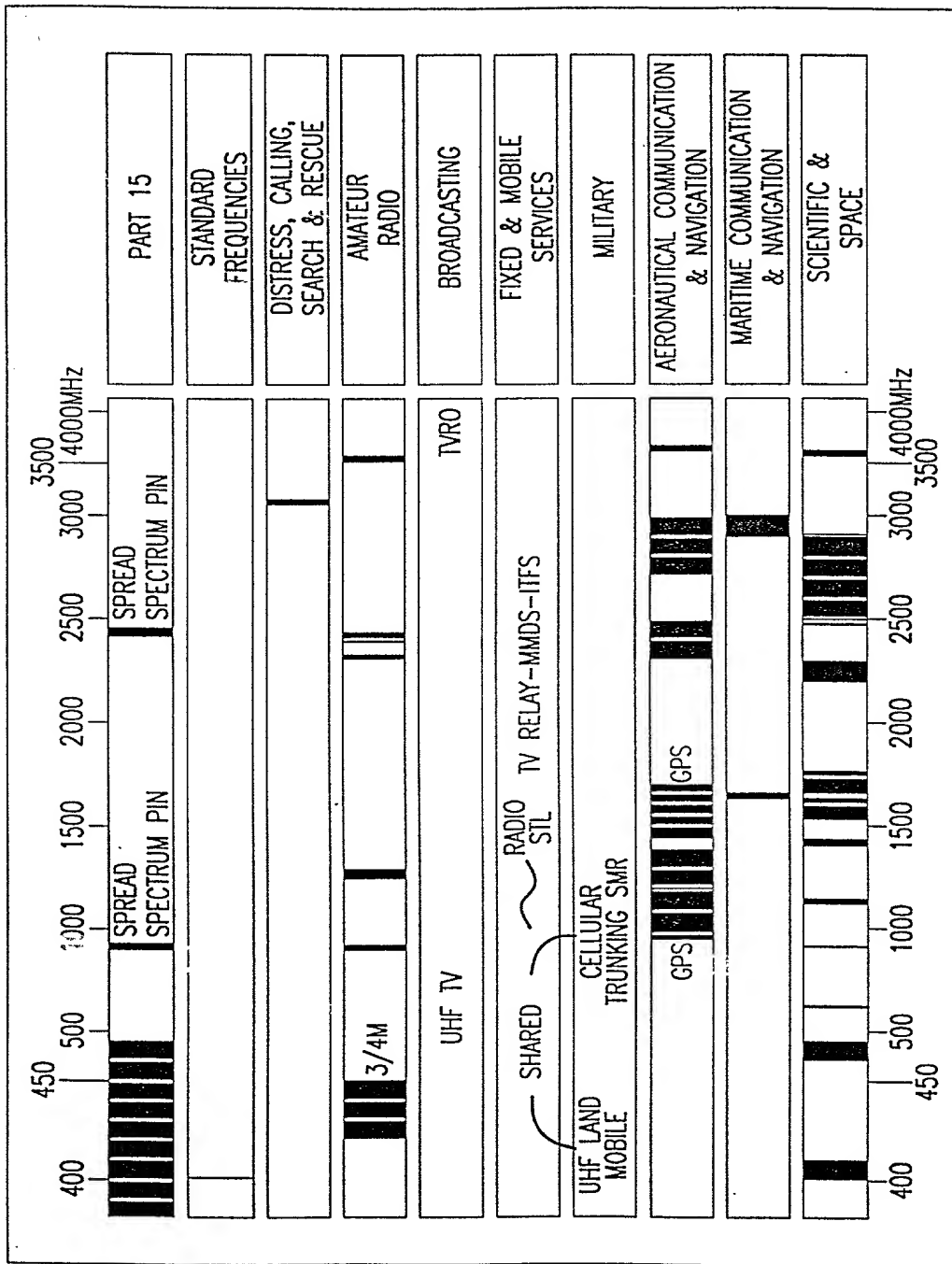


FIG. 42C

09770675.083001

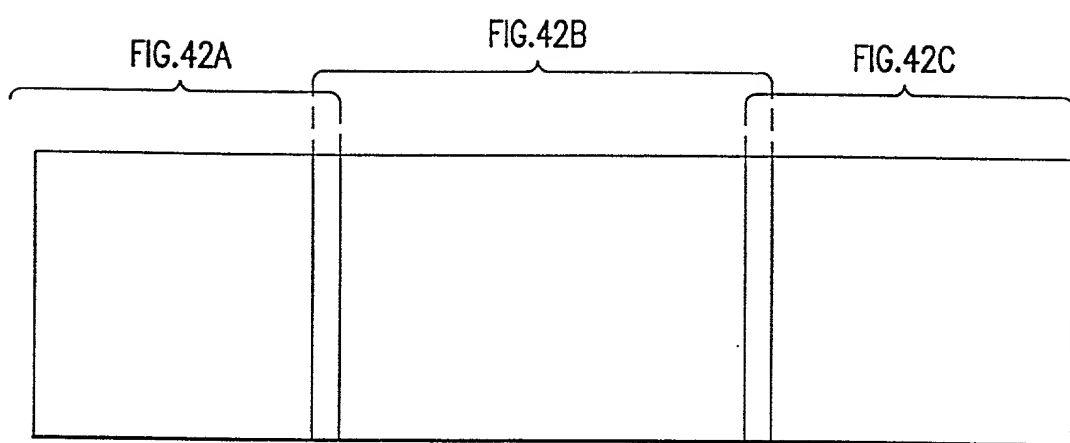


FIG. 42D

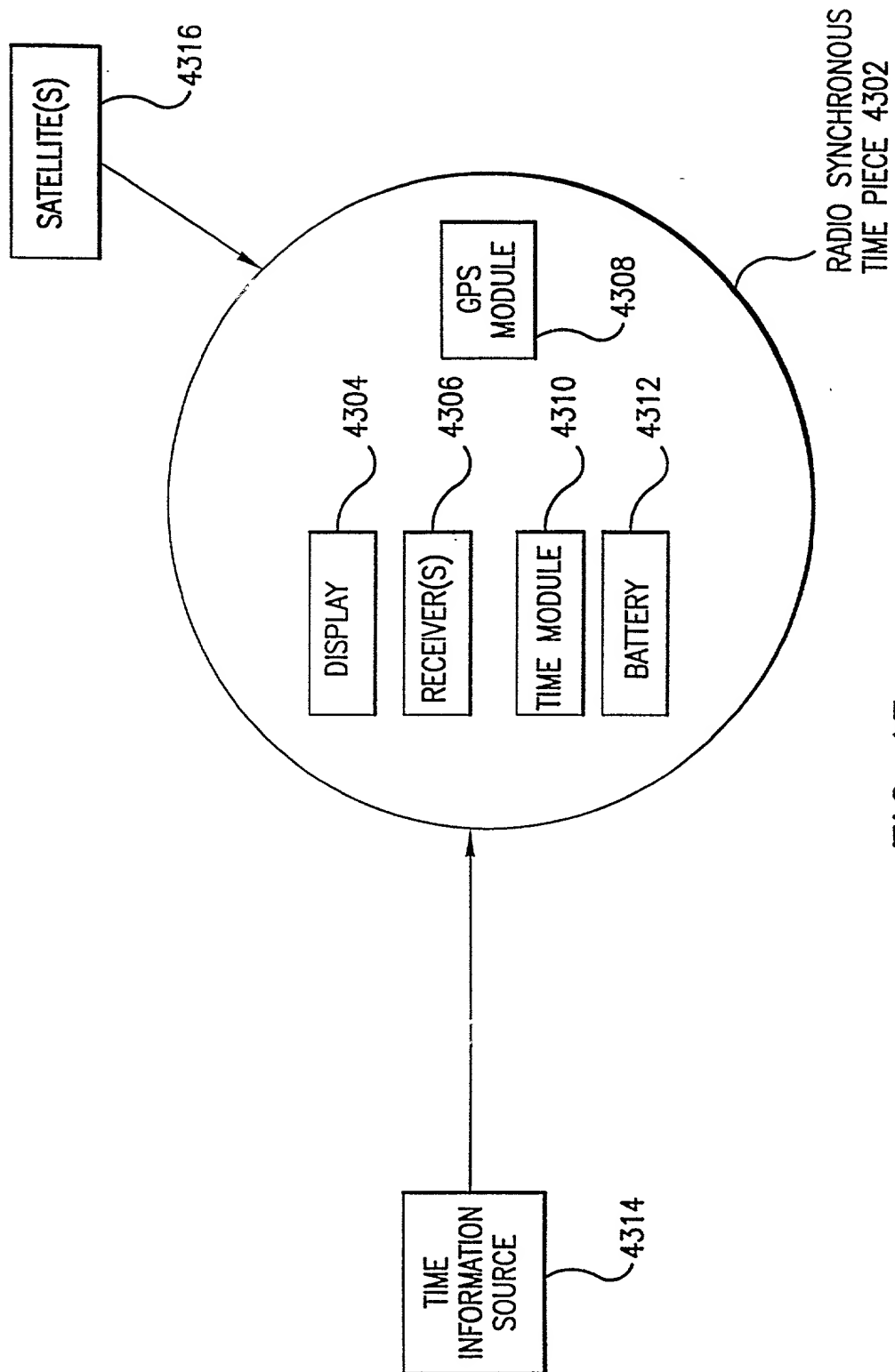


FIG. 43

TOP SECRET 5/90/250

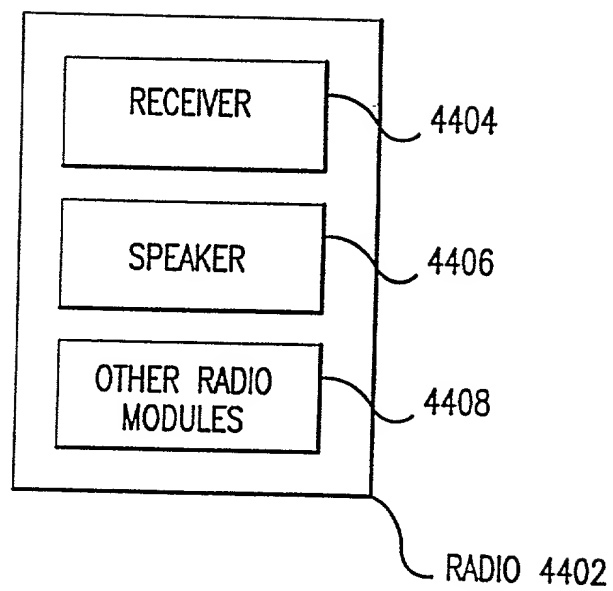


FIG. 44

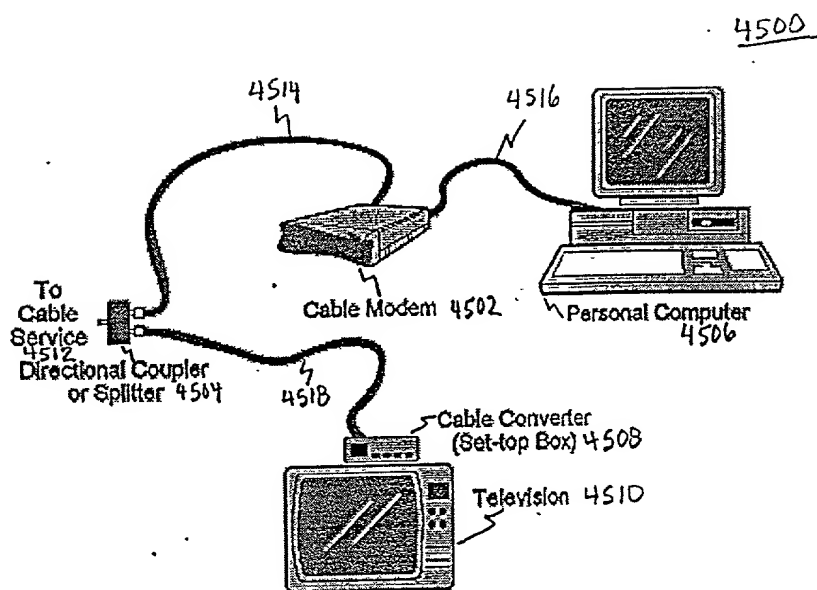


FIG. 45A

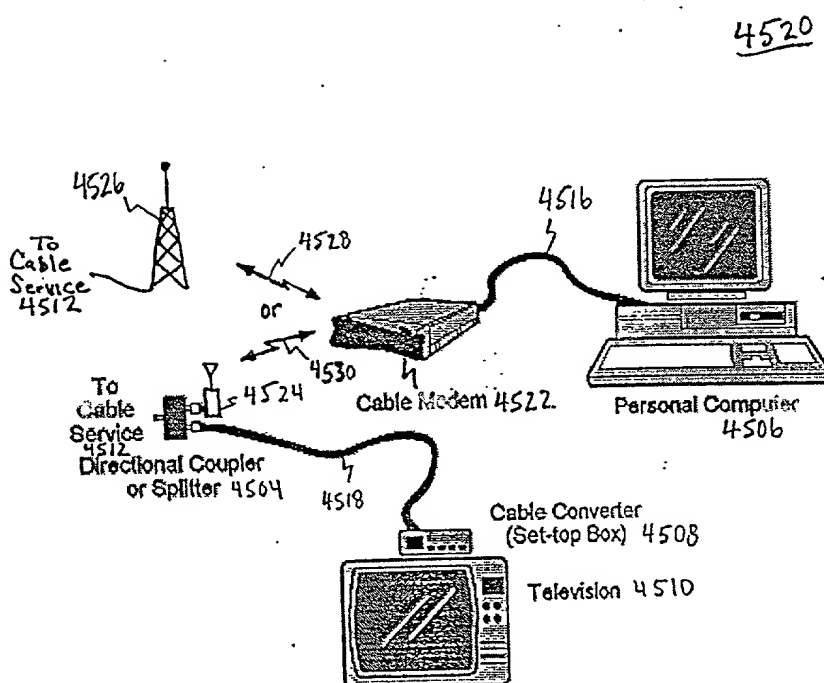


FIG. 45B

09770675.083001
FOOEB052907260

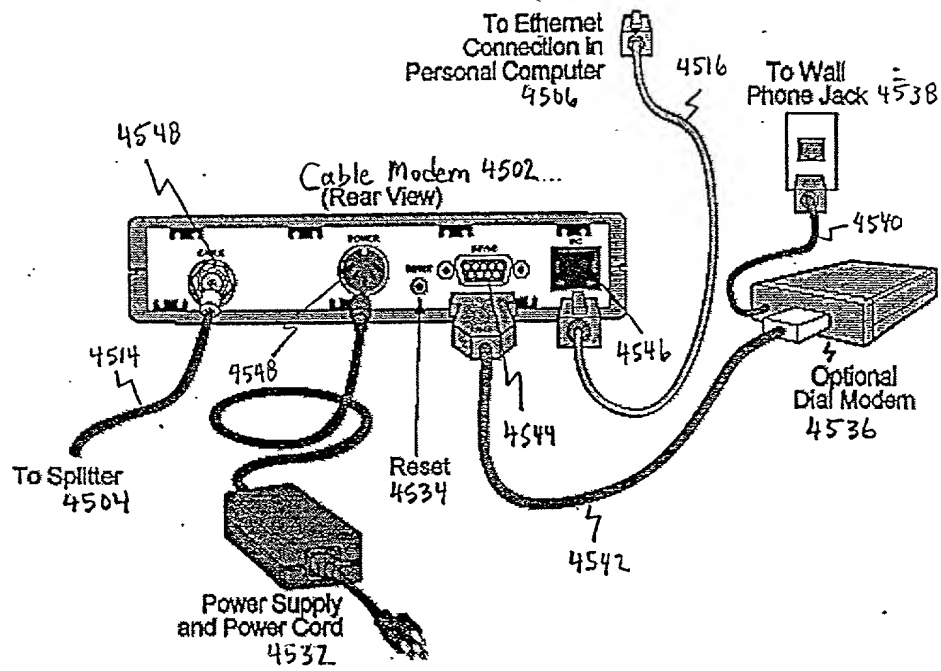
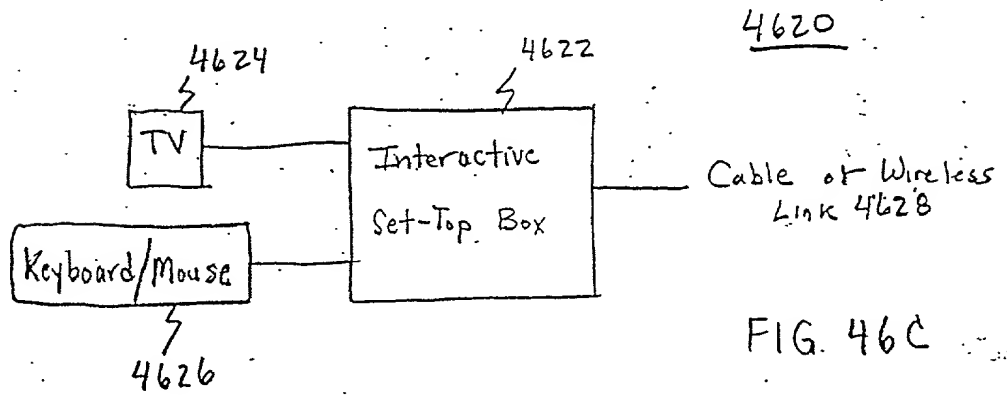
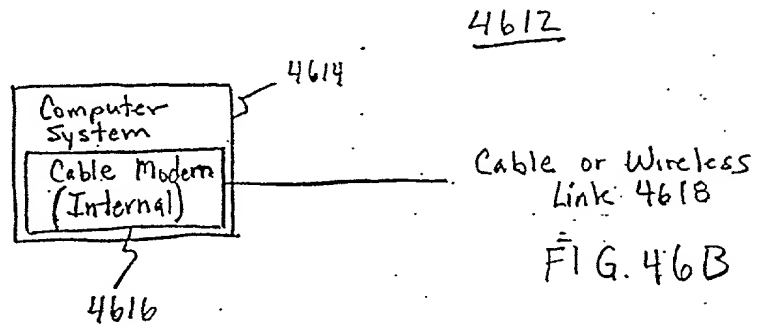
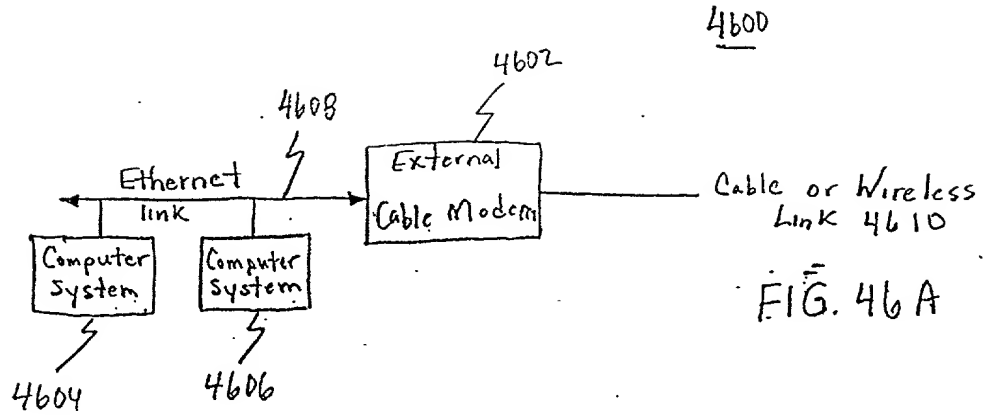


FIG. 45C



4700

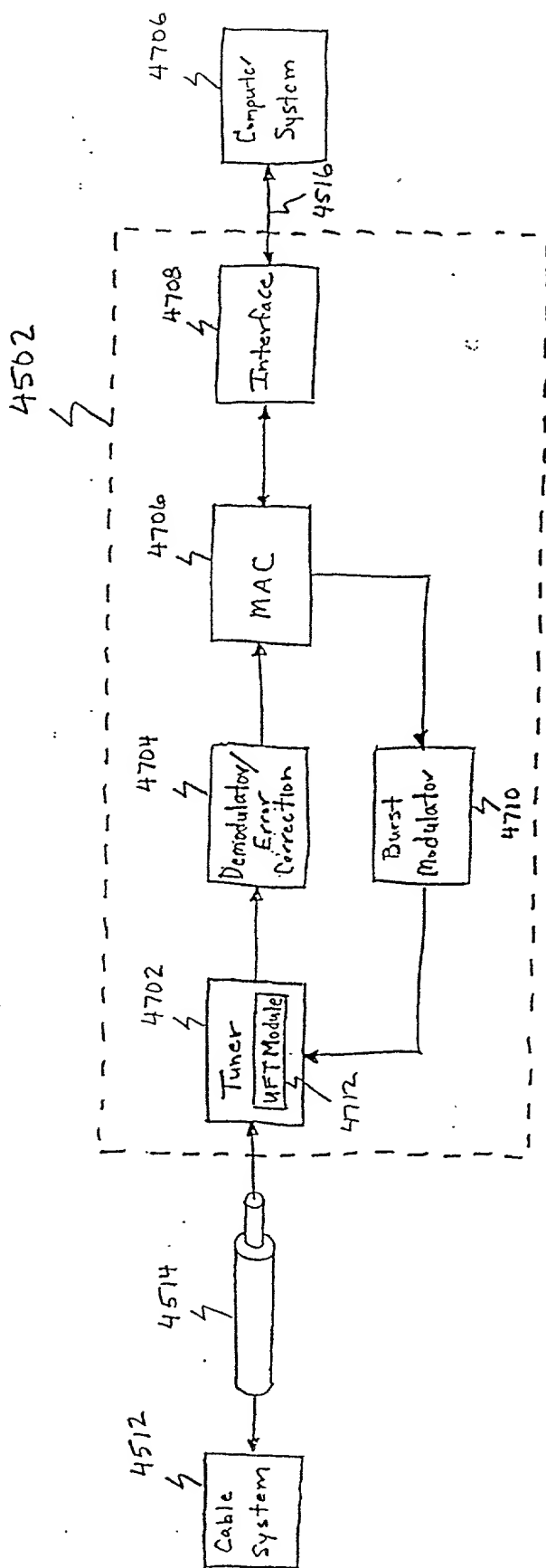


FIG. 47

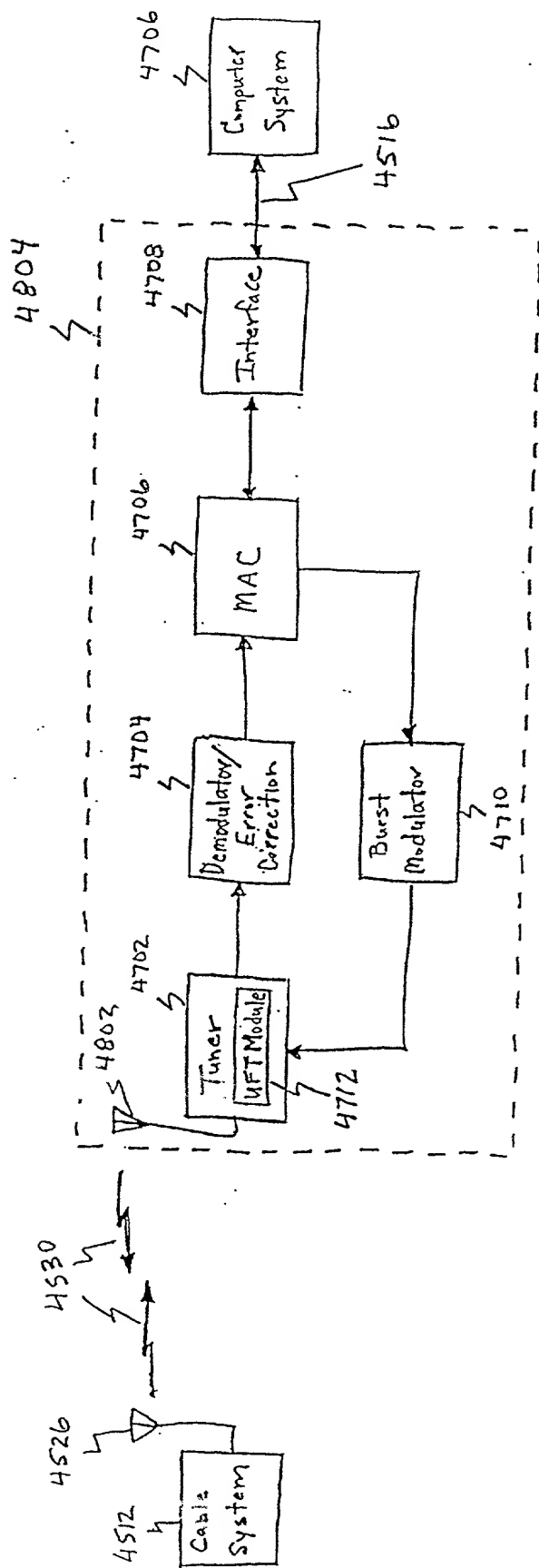


FIG. 48

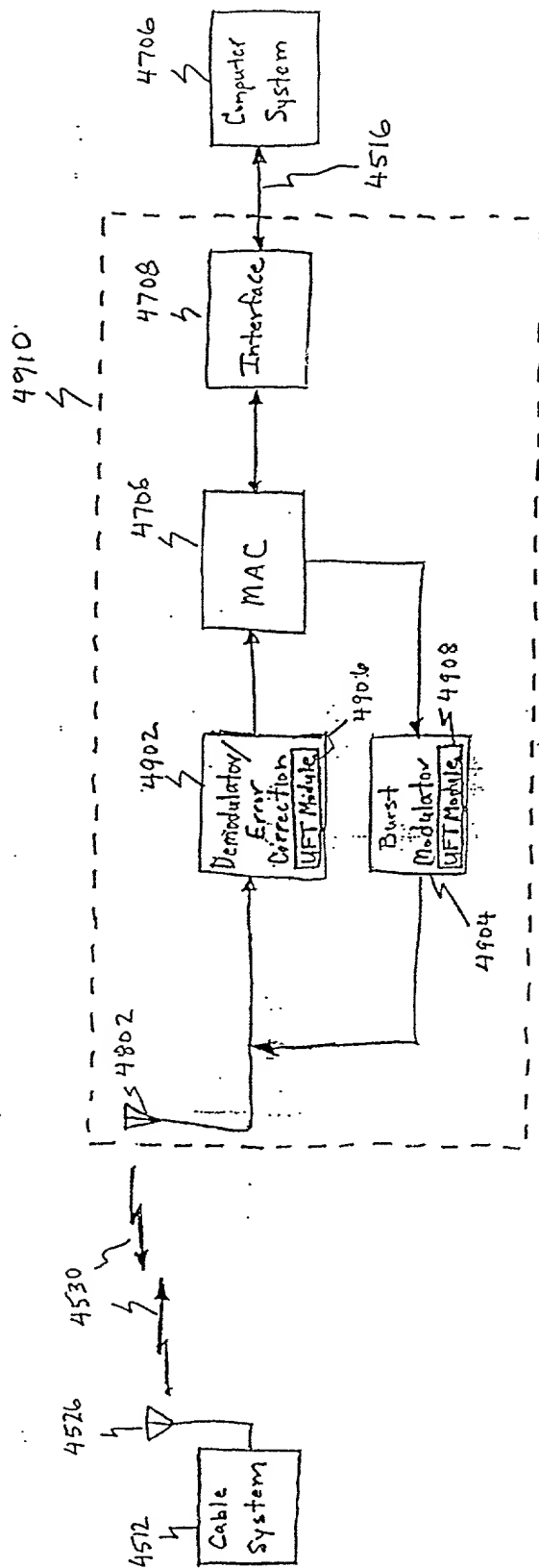


FIG. 49

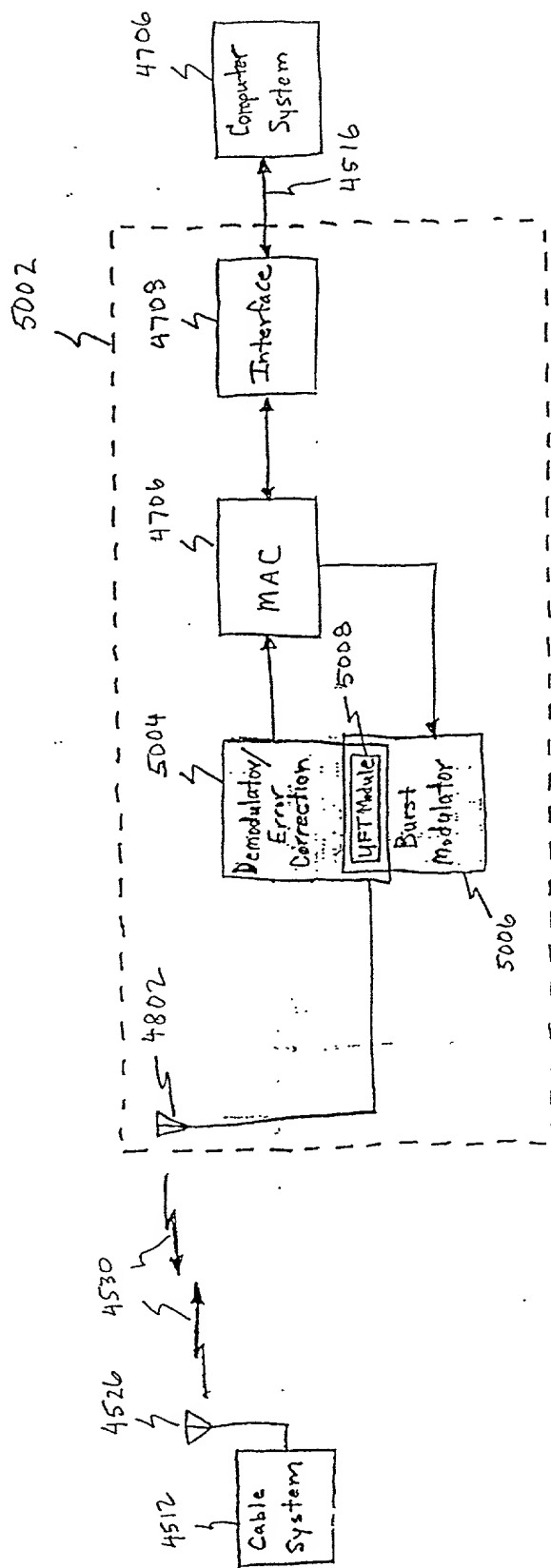


FIG. 50

5100

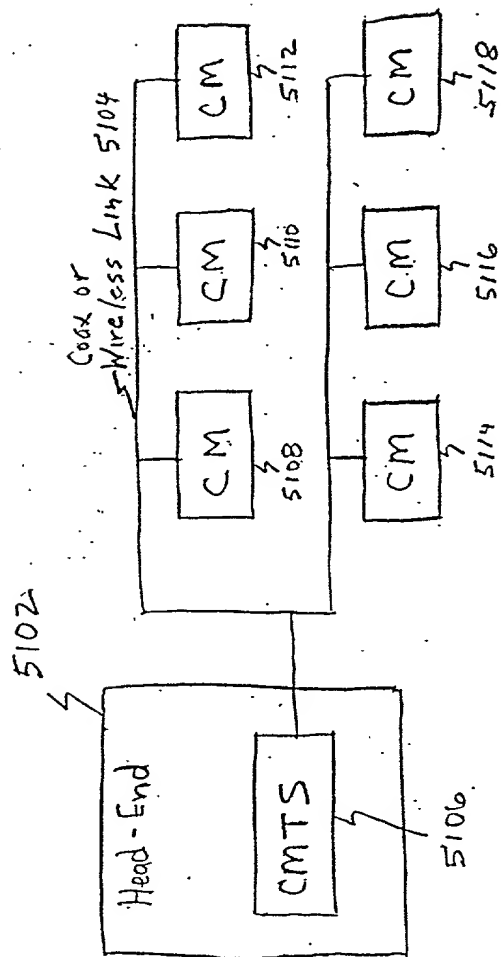


FIG. 51

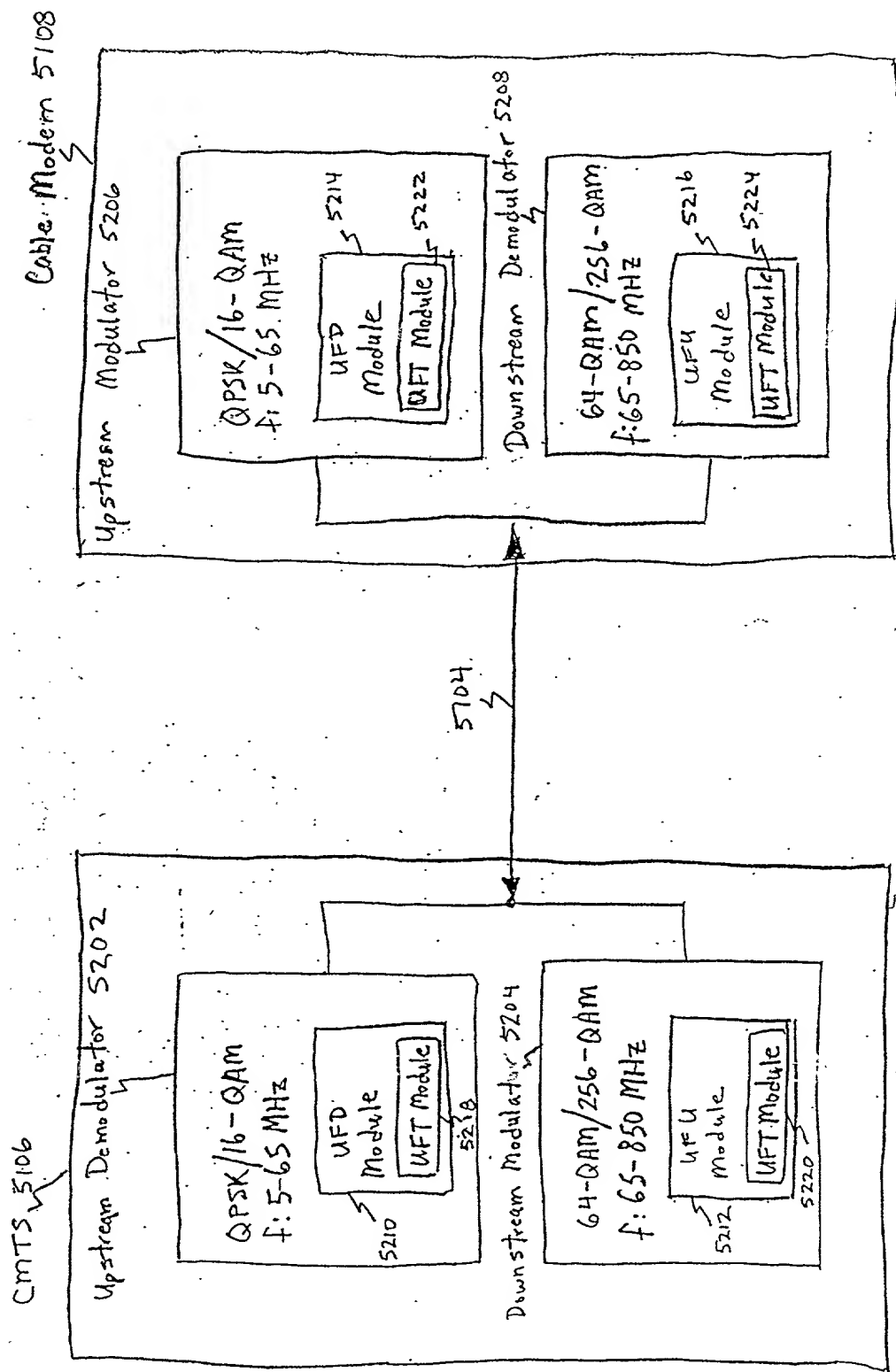


FIG. 52

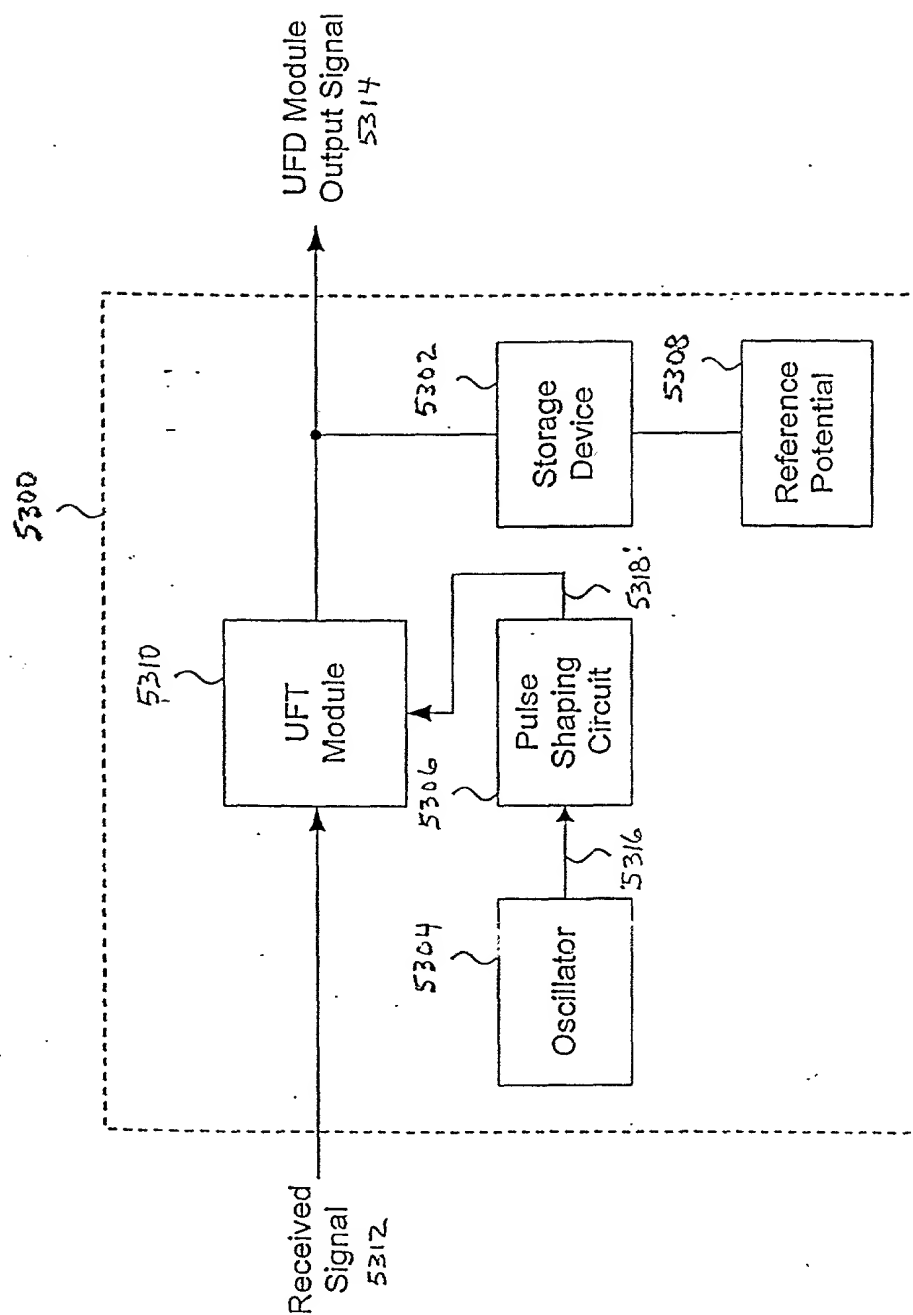


FIG. 53

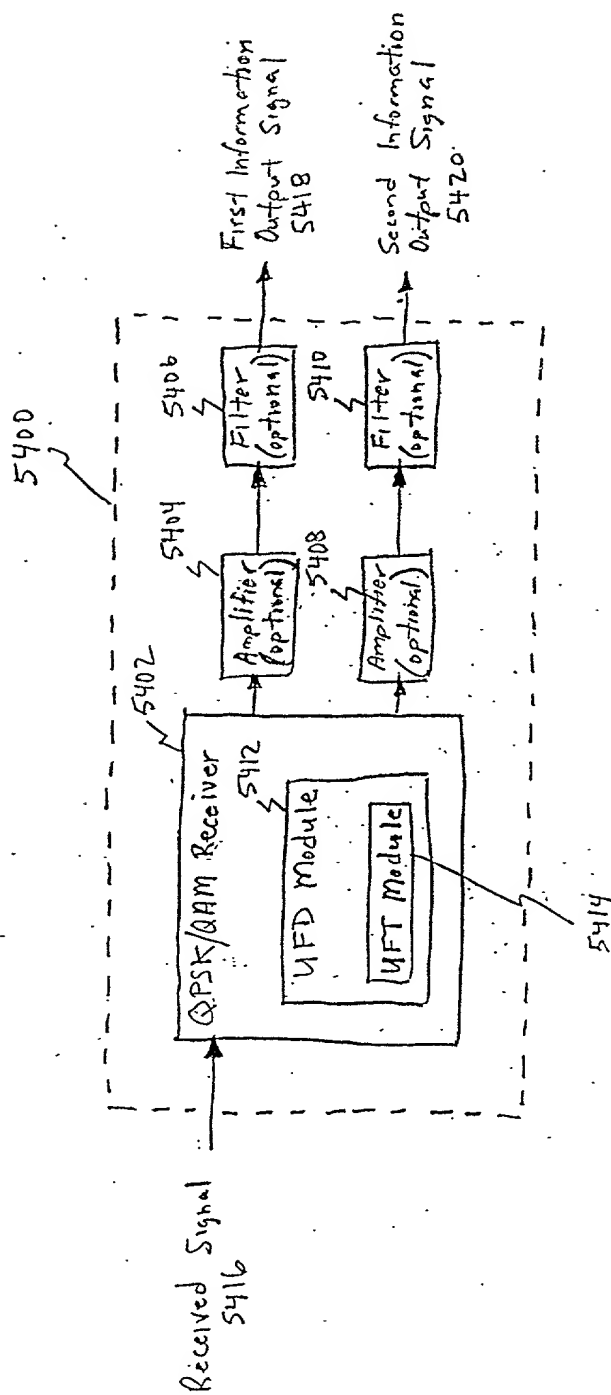


FIG. 54 A

5400

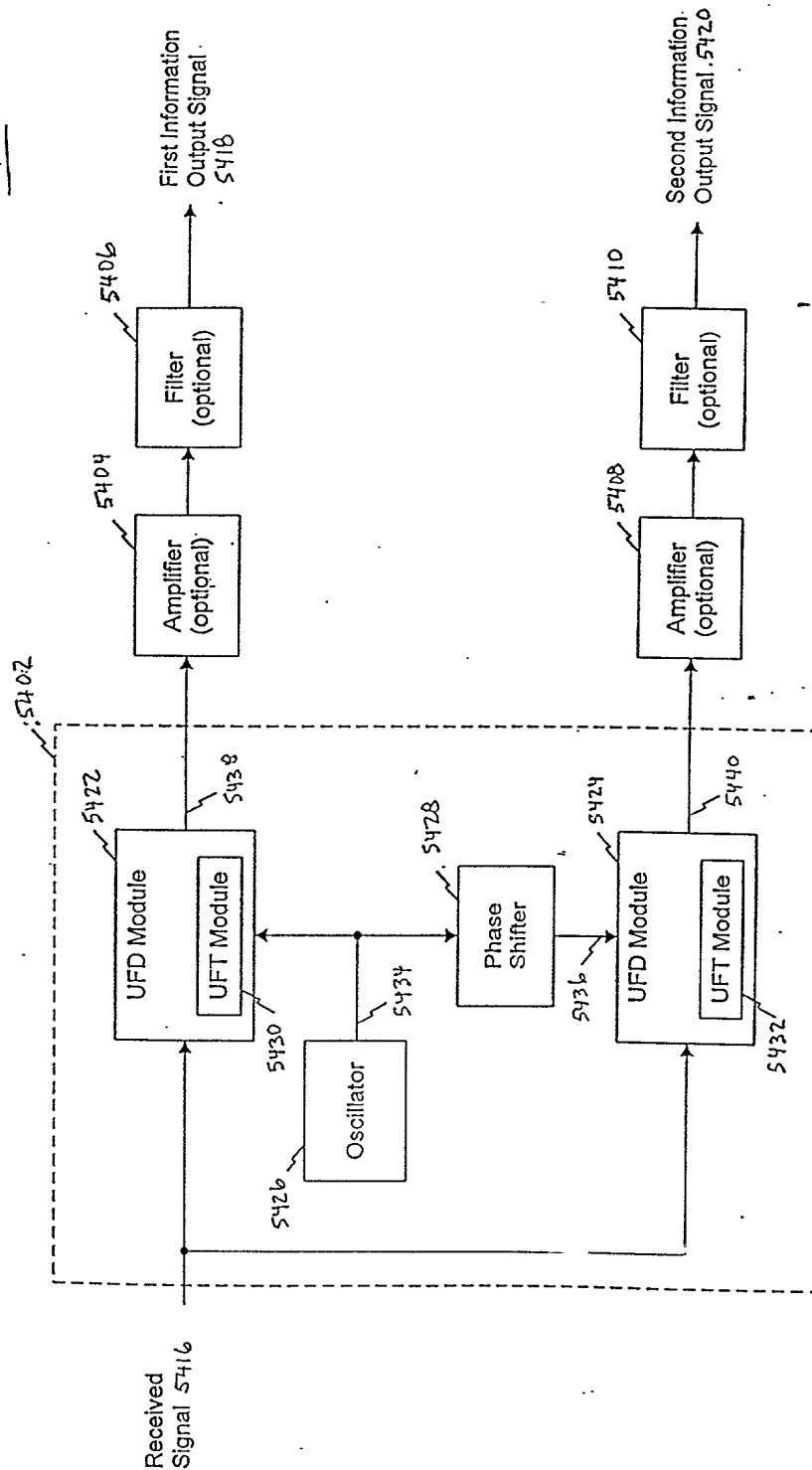


FIG. 54B

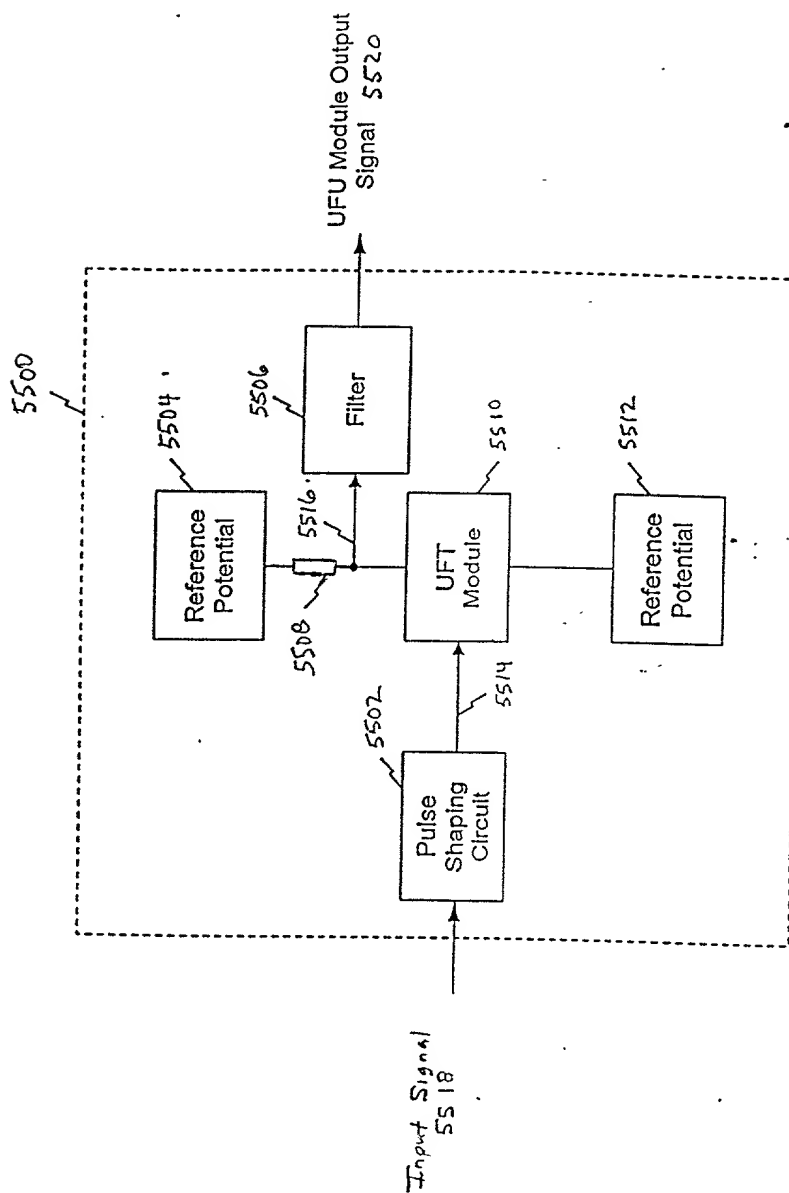


FIG. 55

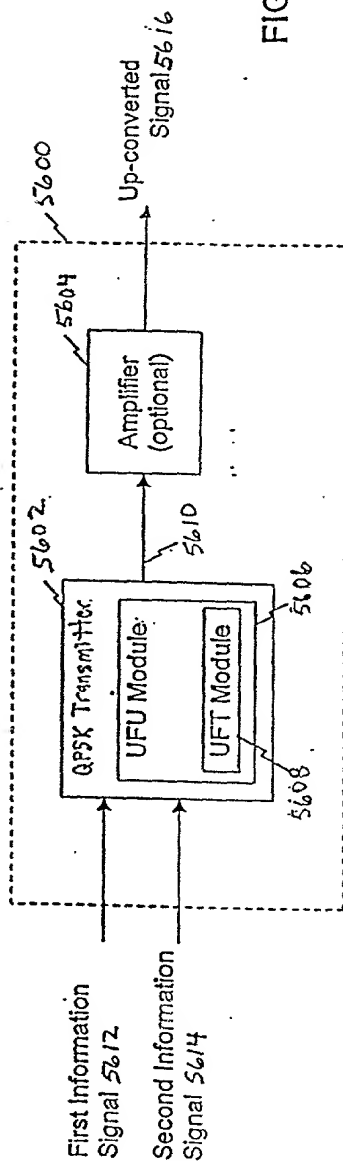


FIG. 56

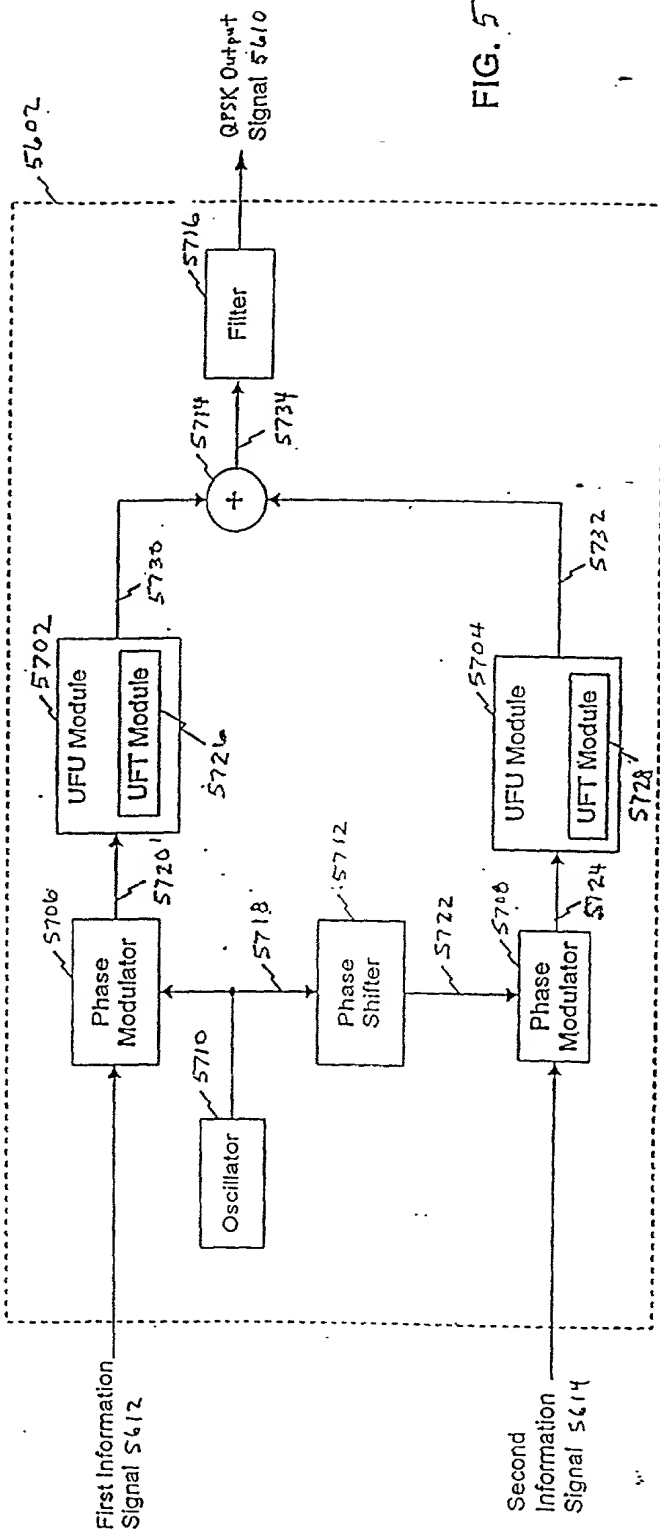


FIG. 57

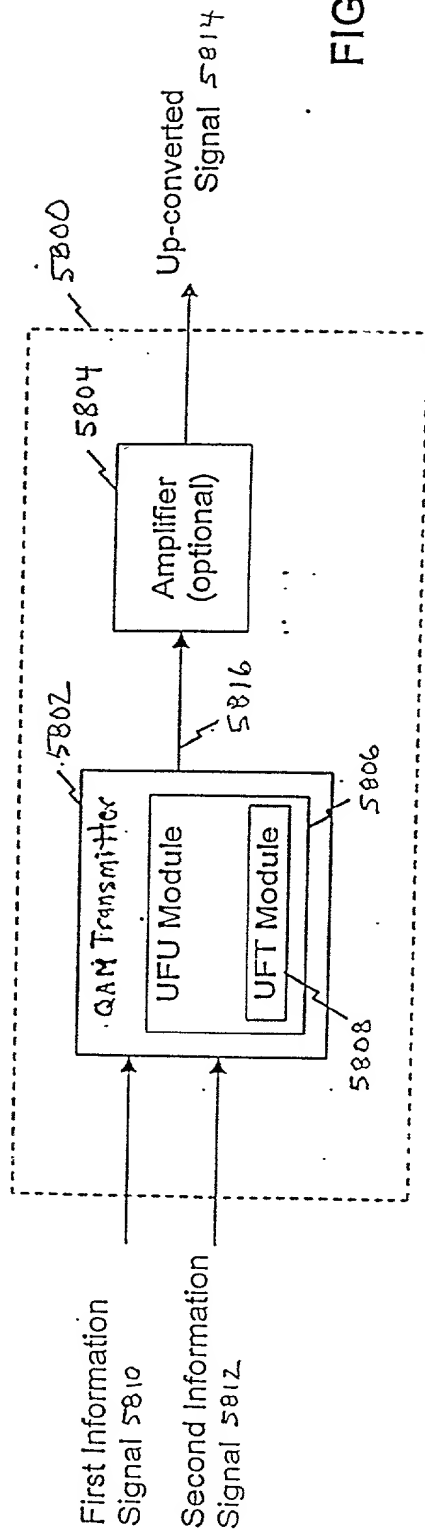
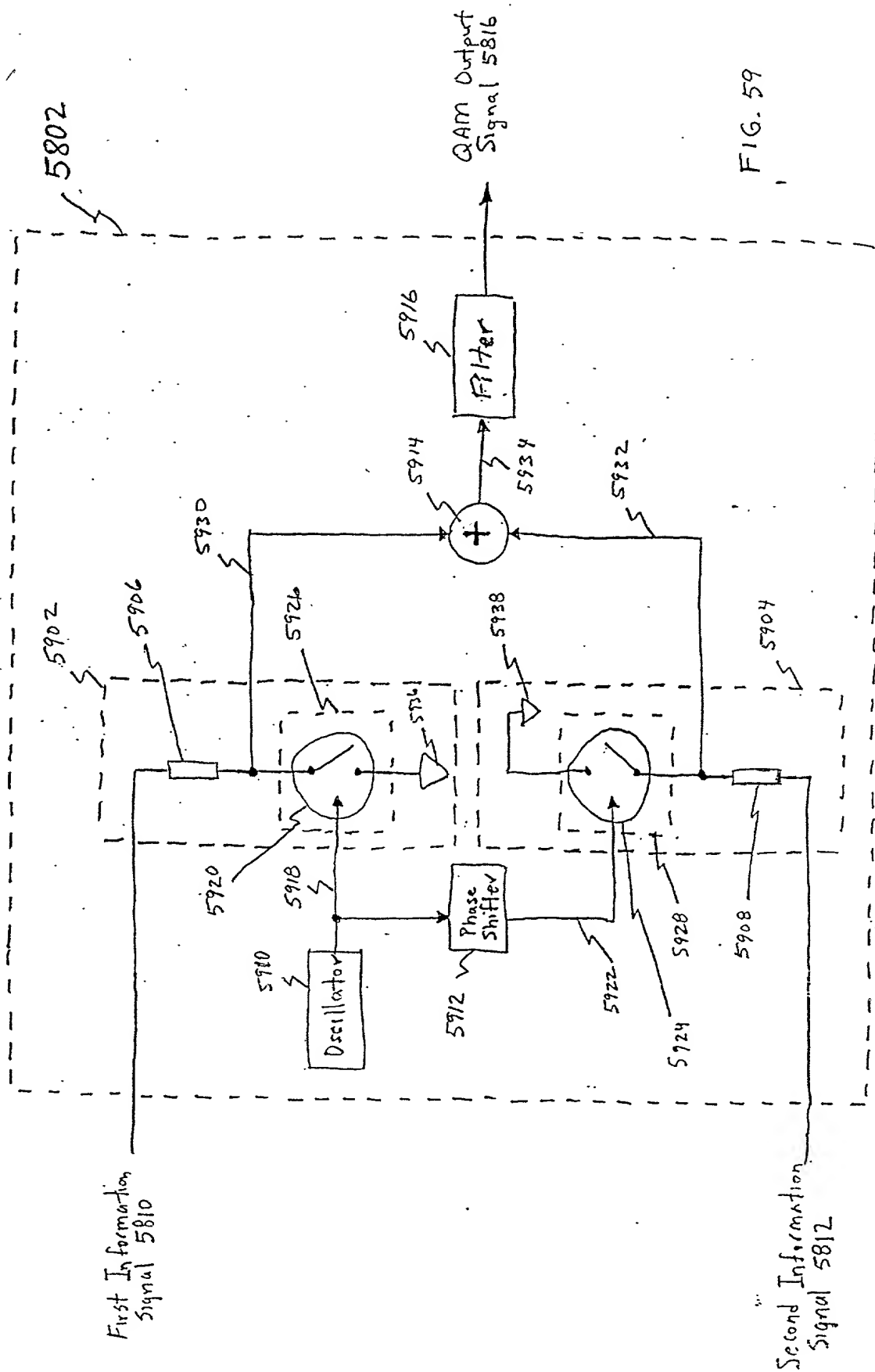


FIG. 58



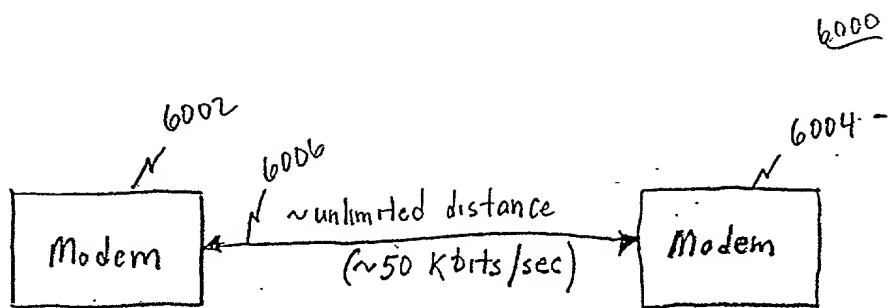


FIG. 60

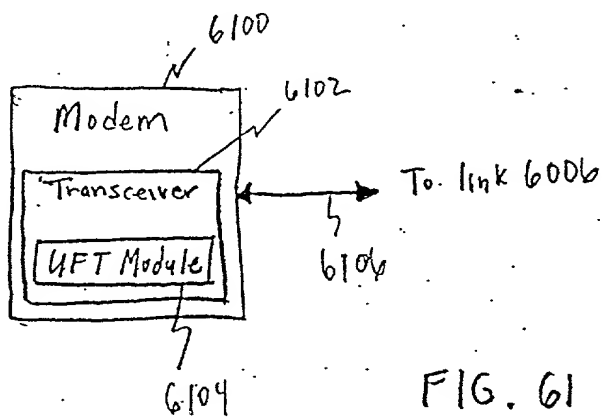


FIG. 61

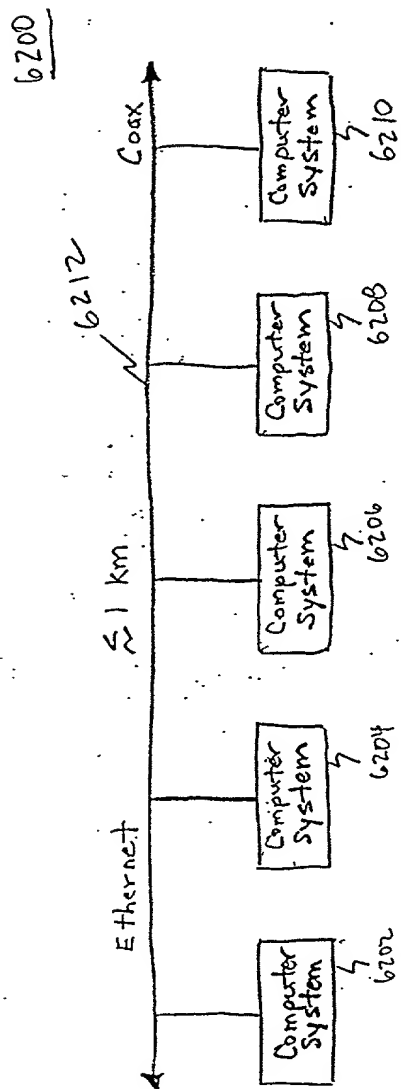


FIG. 62

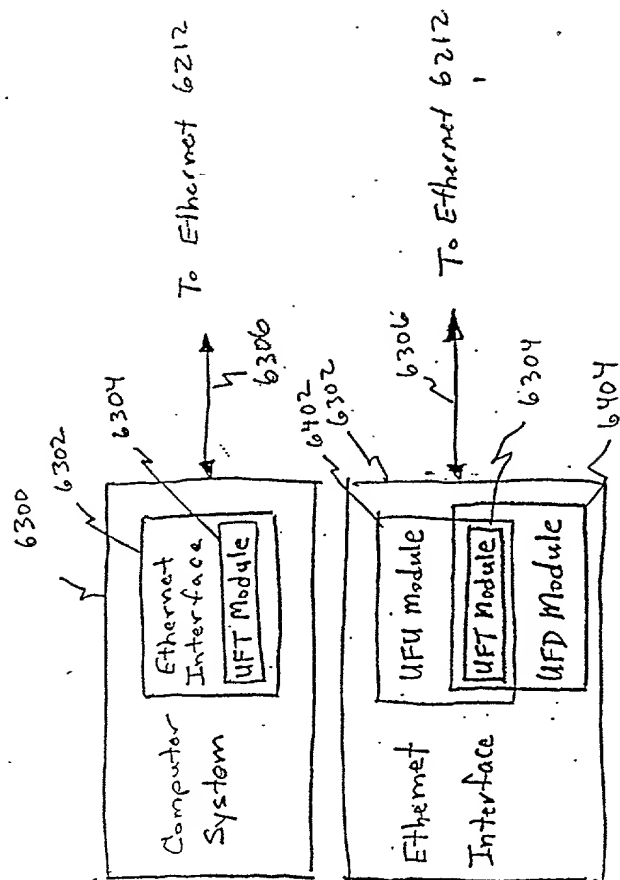


FIG. 63

FIG. 64

FIG. 65

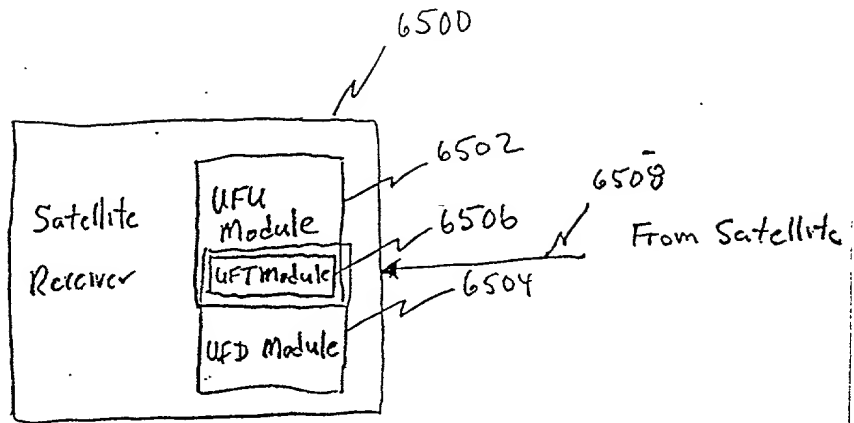


FIG. 66

